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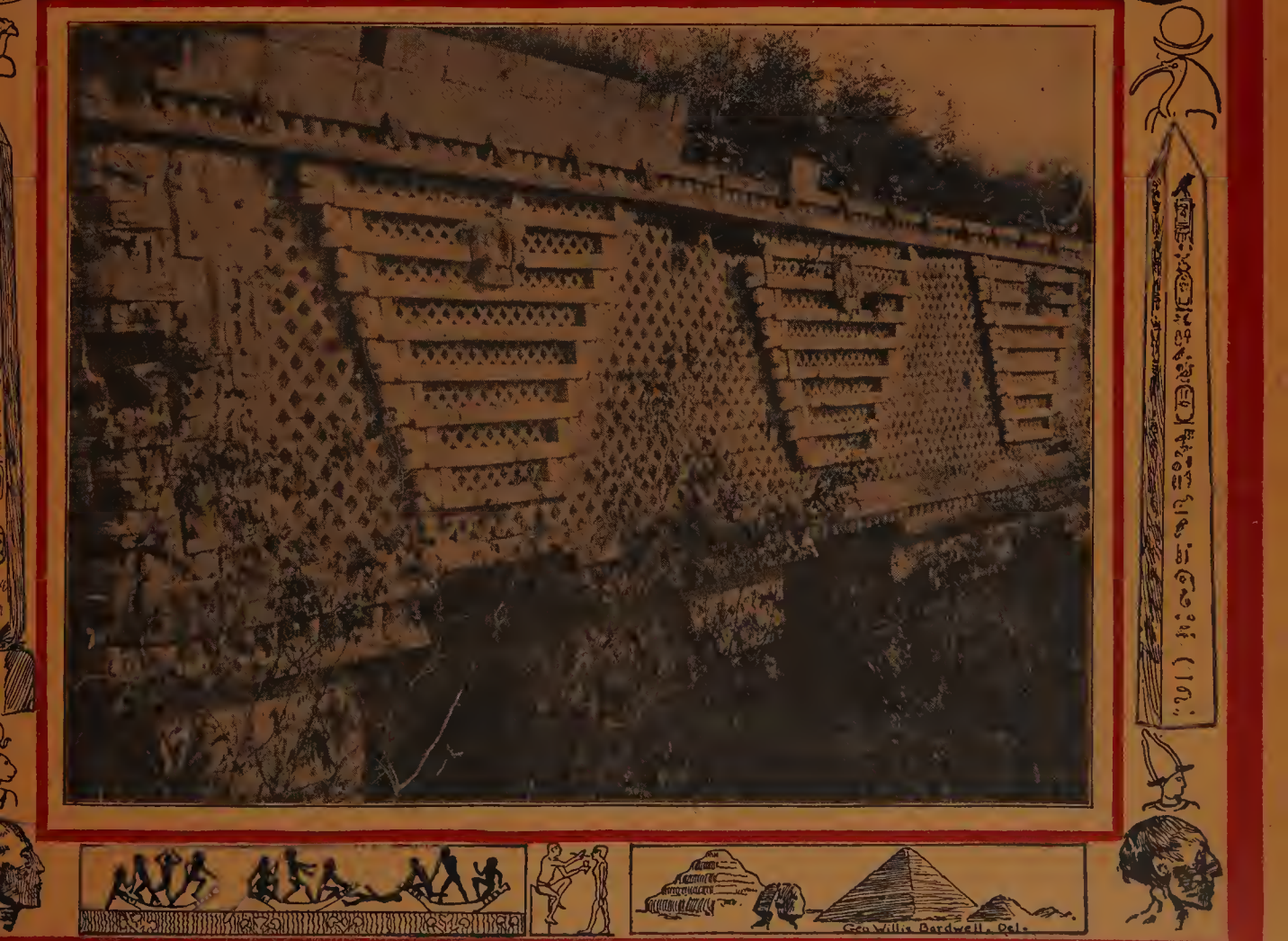


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PART I



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D. D., LL. D., Editor



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JANUARY, 1906

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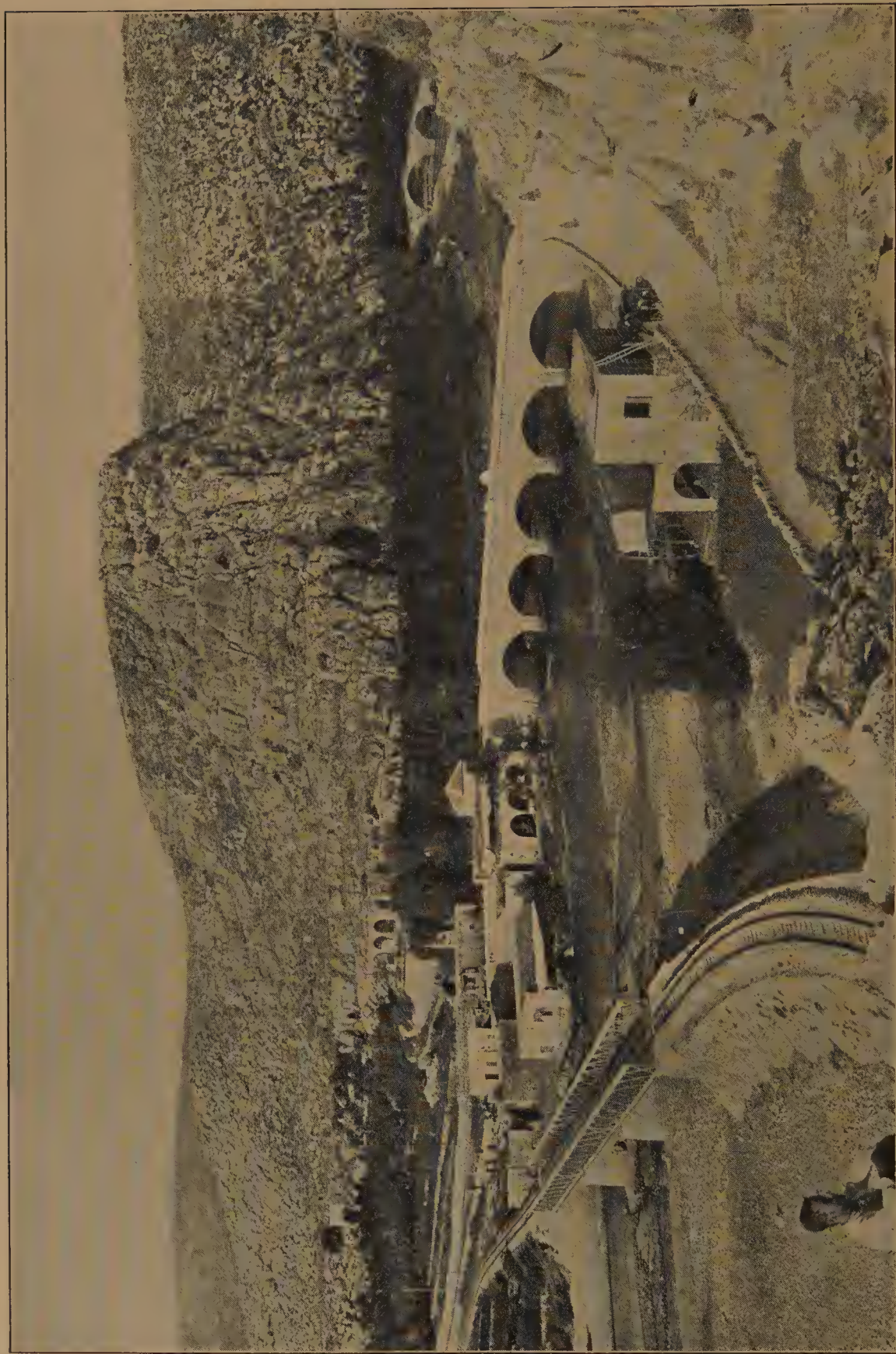
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DOG RIVER OR NAHR EL-KELB, SYRIA

RECORDS ^{OF} THE PAST

VOL. V



PART I

JANUARY, 1906



INSCRIPTIONS AT DOG RIVER, SYRIA

DOG River, or Nahr el-Kelb, as it is called in the native language, rises at the base of Sannin Peak, one of the highest points of the Lebanon range (9,000 ft.) and after a tortuous course of about 25 miles empties into the Mediterranean Sea 7 miles northwest of Beyrout. A short distance before reaching the mouth of the river the rocky precipices abut abruptly upon the Sea, forming a natural barrier to travel which is of great importance. To round this precipice a road had to be cut in the solid rock, along the face of a sea cliff. This has rendered it of great military importance from the earliest times, making it the natural, or as it was at times, the political boundary between the empires of the Nile and the Euphrates. The present road is the lowest of three that have been in use at different times. Above the present road about 30 or 40 ft. are the remains of one used in the time of Roman occupation. This was, like all Roman roads, solidly built, with a concrete bed, much of which still remains. At the highest point of the road, about 100 ft. above the sea, there are the remains of what was evidently a triumphal arch erected by one of the Roman Emperors, probably Marcus Antoninus, who has an inscription a little lower down the hill near the bridge. This would fix the date at about 178 A. D. This

inscription, like all others, is on a large tablet chiseled in the face of the precipice*. The panels are from 4 to 9 ft. in height and from $2\frac{1}{3}$ to $4\frac{1}{2}$ ft. in breadth. There is also one inscription in Greek, and, we are sorry to say, one in French, which was made by erasing an ancient Egyptian inscription to commemorate the insignificant exploits of Louis Napoleon's army in 1860-1861.

Topmost of all are the remains of a road used by the Egyptian conqueror Sesostris (Ramses II) 1,400 years B. C. Of the 9 tablets, 3 have Egyptian inscriptions, and 4 Assyrian. Most of the inscriptions are now illegible, but it is thought that Sennacherib's name appears on one, which would fix the date of that about 700 B. C.

Altogether these inscriptions present striking evidence of the activity of the great empires which dominated the world 3,000 years ago, and practically divided it between them. It would have been well for both of them if this natural boundary between them had been always recognized, and neither had crossed the frontier of the other for purposes of conquest. As it is, these monuments which have endured so long will, if undisturbed, continue to bear visible witness to the importance of the place in ancient times, and to the great unrecorded events which led to this writing on the rocks with a pen of iron. It is doubtful if any monuments of the present day will be so enduring.

While this spot has now lost its strategic importance there is much evidence close by that in prehistoric times it was a central place for the habitation of prehistoric man. The limestone rocks of the region are fairly honeycombed with caverns which offered shelter to the earliest visitors to the coast of the Mediterranean. Just above the oldest of the roads, and but a few rods from them, are the stalagmite floors of 3 or 4 caverns that were occupied by man in prehistoric times. So long ago was this that the roofs of the caverns have fallen away and been carried into the sea. One of these floors is 9 paces long and 6 wide. All this space is covered with a stalagmite formation 18 inches thick containing flint implements, and the bones of various large animals which were used for food. Among the animals, whose bones were found in this breccia with flint implements, are the extinct woolly rhinoceros, the wild ox and deer. The bones of the smaller animals had been broken to extract the marrow.

It is strange, however, that though the sea is so near there are no remains of shell fish in these accumulations. This fact supports the theory that at the time of the earliest prehistoric occupation the land bordering the eastern shore of the Mediterranean stood considerably higher than now, so as to have a wide stretch of plain on the border, which is now covered with water. Not only would this account for the absence of shell fish in the breccia, but it would help explain the presence of the woolly rhinoceros in the region, since it would afford him both fit grazing ground and opportunity to migrate

* See Records of the Past, vol. II, pp. 194-207.

thither during summer from the south. This agrees also with numerous other facts going to show that in recent geological times the whole coast and bed of the Mediterranean were so elevated as to give many African animals free access to Southern Europe. Evidently since man's appearance in the world elephants and rhinoceroses could make their way from Northern Africa to the islands of Malta and Sicily. By referring to a former number of this magazine [Vol. III, part 7, pp. 216-219] the reader will find an account of the wonderful cave of San Cero, near Palermo, which was packed full of the bones of these animals. Thus, slowly, is coming in a vast amount of cumulative evidence showing great changes of level all around the Mediterranean since the period of man's advent, and showing an antiquity of man which far exceeds that of the inscriptions, ancient as they are, on the precipice overlooking the mouth of Nahr el-Kelb.

G. FREDERICK WRIGHT.

OBERLIN, O.

CLIFF RUINS OF CAVE VALLEY, NORTHERN MEXICO

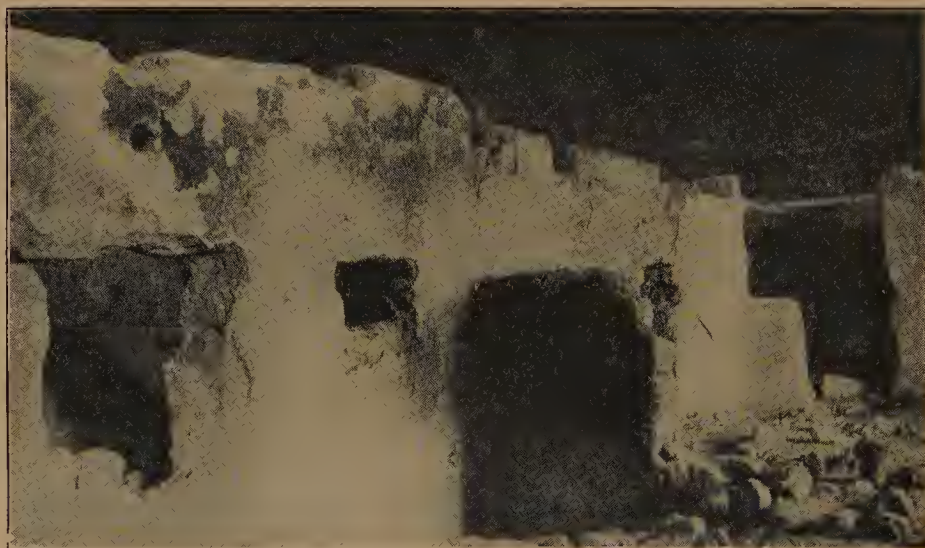
THE cliff dwellings of Cave Valley in the Sierras Madres of Chihuahua have as a result of a second visit by the writer, yielded additional data which it is my intention to add as a supplement to my paper published on this subject in the December number of the RECORDS OF THE PAST.

As was before observed, Cave Valley is situated on the head waters of the Piedras Verdes river, and from its formation is pre-eminently fitted for the abode of the Cliff men. The precipitous sides and numerous abutting box-canyons are deeply marked with horizontal sutures, due to the forces of erosion, the effects of which in this section are of a very apparent nature. The caves are located singly and in groups, the largest group consisting of 5 in the face of a great cliff, alluded to in the last article as burial caves on account of the mummies recovered from them, and the apparent lack of all remains of buildings. This term I now find to be of no greater application to these than to any of the other numerous caves scattered throughout the Sierras, as greater facilities for a more thorough exploration have been instrumental in bringing to light numerous signs of their early occupation. The term early is used advisedly not only as referring to a remote period but further as compared with the remainder of the cliff ruins in this Valley. As just observed, to all general appearances, with the exception of the cement floors and smoke stained roofs of the caves every sign of their having ever been inhabited is lacking, but diligent excavation by a strong force

revealed small pieces of adobe that evidently once formed portions of the walls; sections of earthenware receptacles measuring approximately 2 to 3 feet in diameter, made of baked mud and grass and showing marks of fire on the bottoms, both inside and out; besides several pairs of upright posts averaging 3 in. in diameter and 2 ft. in length, the upper ends of which were burned off at the floor level,



VIEW OF OLLA CAVE, SHOWING SLOPING DOOR



OLLA CAVE, WALL WITH APACHE PICTOGRAPHS AND OTHER INSCRIPTIONS, IMMEDIATELY BACK OF THE OLLA

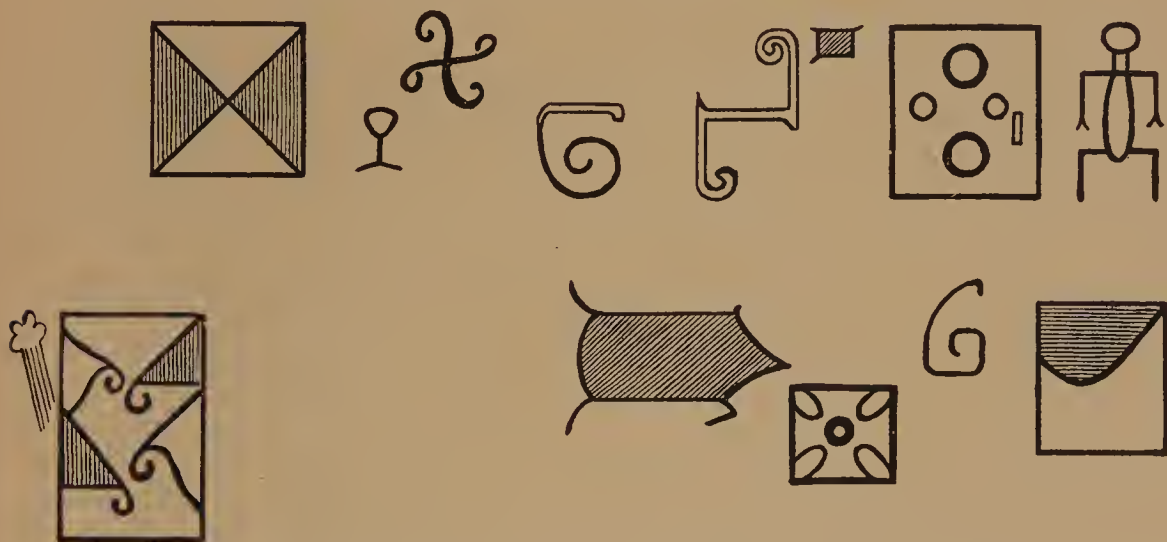
the lower showing signs of having been cut by blunt instruments,—very probably stone axes similar to the one of the universal American type that was obtained from Olla Cave in the same valley. The distance between the posts in each pair was about 2 ft. Their use is entirely problematical unless they fulfilled the part of door-posts,—a conjecture which I am unable to support by any sustaining evi-

dence, on account, of the disappearance of all wall lines, and my inability to discover any other remains by which to logically determine their position.

A large amount of broken pottery of durable texture but inferior finish was also unearthed. A peculiar ornament recovered from one of these caves consisted of a (presumably) white tubular shell $1\frac{1}{8}$ in. long and about $\frac{1}{8}$ in. in diameter, with 4 encircling indentations near one end, in which was enclosed another tubular shell of much smaller dimensions. A pendant of polished bone $1\frac{1}{4}$ in. long was also found, the hole in the upper end having been drilled from both sides with a blunt instrument.



COLORED DESIGNS IN BLACK AND RED ON THE WALLS OF OLLA CAVE—
PROBABLY THE WORK OF THE APACHES



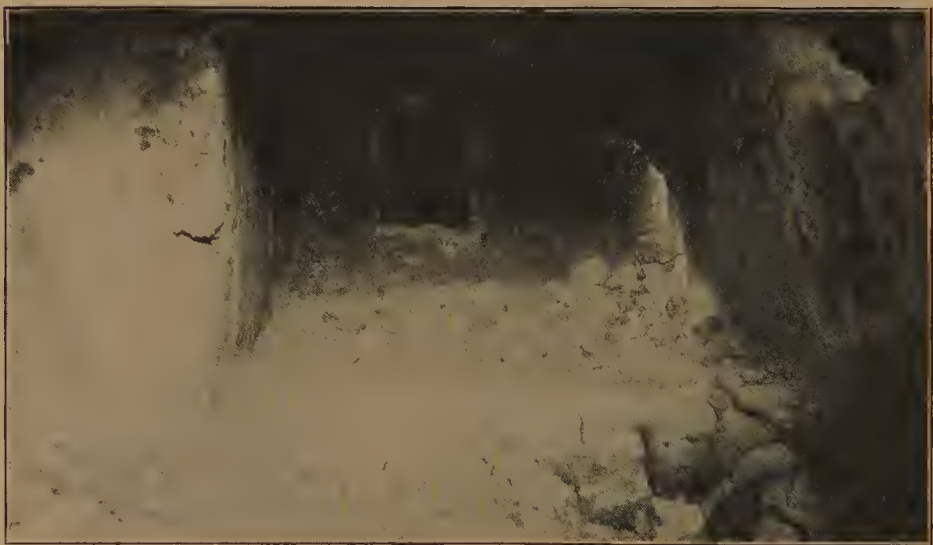
PICTOGRAPHS ON THE WALL OF THE SOUTHERNMOST CAVE OF THE
LARGE GROUP IN CAVE VALLEY. BEGINNING AT THE RIGHT THEY
FORM A CONTINUOUS LINE. (THE SECOND LINE SHOULD BE
PLACED TO THE LEFT OF THE FIRST)

The largest cave of this group measuring 180 ft. by 33 ft. deep, and 18 ft. high at the mouth, contained by far the greatest number of relics. In places the depth to bed rock was over 6 ft., and in other sections was doubtless much greater. Signs of fire were frequently encountered, besides extensive layers of ashes,—a fact which furnishes strong ground for the presumption that the inhabitants probably met a violent end.

On the extreme southern end of the most southern cave a number of rude pictographs have been incised in the soft conglomerate, by means of a hard rock having at first the appearance of being traced with mud. Whether they are the work of the Cliff men or not there is little certainty. From the colored designs on other ruins in this section, the execution of which may with reasonable certainty be attributed to the Apaches, I feel safe in asserting that at least these



CAVE RUINS, CAVE VALLEY. ROOM TO THE RIGHT PROBABLY WAS
USED AS A GRANARY



INTERIOR OF A CLIFF-HOUSE, CAVE VALLEY, SHOWING THE OUTWARD
SLOPE OF THE WALL ON THE RIGHT, BY MEANS OF WHICH A
SHELF ABOUT 6 IN. DEEP IS FORMED HALF WAY UP
pictographs have not a similar origin. A resemblance that was noticed by the writer, when in this region before, between the surrounding rock inscriptions and those of portions of Arizona,—notably those near Adamana,—is again suggested by the outline of one or two of these hieroglyphs. It is however, interesting to note the total dissimilarity of style between these and those of the South

as evidenced by the rock inscriptions at Chiriqui, Masaya, Nijapa, Cuernavaca and other places.

While the structures in nearby caves are in a fair state of preservation, and from indisputable signs,—numerous superimposed coats of plaster, extensive patches and alterations in the walls, absence of all wood-work of any kind, and the general condition of the ruins when first discovered,—are themselves of great antiquity, the abandonment of this large group of caves must have preceded their construction, or at least have been contemporaneous with it. The adobe in the case of the latter seems to be of similar material and workmanship to that used in the other ruins, and yet not only is there not a single wall standing, but only in two of the caves does excavation reveal an occasional piece of the adobe of which they were constructed; the position of the group does not unduly expose it to the



LARGE BOULDERS IN PARAPET OF VILLAGE RUIN, CAVE VALLEY

effects of the weather, though its situation is prominent; while the dust from the roofs of these caves frequently covers the floors to a depth of from one to two feet.

Access to them, while not especially difficult, is over a mass of steep detritus, the face of which was fortified by heavy stone parapets whose foundations are now covered with vegetation. In one case a well constructed wall a few feet from the top of the slope was uncovered for nearly 4 ft. of its width,—further excavation being prevented by the presence of a large boulder which had lodged upon it. What the original size of this structure was it is impossible to say, although the massiveness of the section revealed, the steepness of the ascent, and the proximity of an abundance of arable land, would in my mind preclude the supposition that it was intended solely as a retaining wall for agricultural purposes, as was apparently the case in the numerous trincheras in the surrounding draws.

Almost directly across the valley is a bench rising perhaps 25 ft. above the river bed. On this numerous mounds, potsherds and

broken metates indicate the site of a village ruin, of which the huge boulders forming sections of defending walls, extensive and intricately arranged trincheras, and the remains of what was probably a rude smelter, still stand as monuments to the strength and energy of the builders.

Further up the valley is located Olla Cave, so named from the immense adobe olla shaped granary that stands at its mouth, and which was described in my last paper.* Further excavation in this cave brought to light an excellently preserved skeleton buried about two feet below the adobe floor, near the remains of a wall. The knees were drawn up, the elbows projecting far behind, and the head pointing slightly downward, faced to the west, as do all the skeletons in this region of which the writer has any knowledge.



SKULL FROM OLLA CAVE, CAVE VALLEY

Nearby were found the bones of a child who must have died at a very tender age as the teeth were just beginning to be cut. About two feet from these skeletons portions of another adult were recovered. Only a small piece of broken pottery was discovered near the dead. This cave also furnished two excellent specimens of oblong stone crushers used in connection with the metate, and called by the Mexicans "manos;" some pieces of very fine matting of superior workmanship; and a polished mahogany stick $16\frac{7}{8}$ in. long and $\frac{1}{2}$ in. wide, having a thickness of about $\frac{1}{8}$ in., and rounded at the ends in sharp lines. On its surface are numerous indentations running longitudinally, caused doubtless by the scraping of some sharp instrument. The nearest trees from which mahogany of this kind could have been taken are many miles to the South. But that this stick was shaped

See RECORDS OF the PAST, Vol. IV, Part XII, pp. 355, et seq.

by the Cliff men is by no means certain as it was found in a secluded corner between a wall and the cliff, beneath an opening in the former. The stick is black with age, and was probably used by its former possessors whoever they were, in the curing of skins.

Cave Valley contains a number of other ruins of a construction fully described in the first paper, and not differing to any extent from each other except in the case of Olla Cave. The walls average as a rule one foot in thickness, and each cave of any size seems to contain a granary of some description, but the estufas of the north are lacking.

It is with regret that the writer notes that these ruins which have in most cases so nobly withstood the ravages of time are now falling by the hand of man who slowly though surely is using his powers of destruction with the ignorance and fatality of a Zumaraga, and Omar, or an Arbaces. A small amount of comfort however, is derived from the fact that even at the present day new ruins are being discovered and brought to light in the fastnesses of the Sierras.

A. H. BLACKISTON.



PREHISTORIC TREES AT HORSEHEADS, N. Y.

ON the afternoon of June 21, 1905, Newton Creek, a small stream flowing through Chemung County, suddenly assumed the proportions of a river, owing to the passing of a storm accompanied by unusually heavy precipitation. As a variation upon the usual flood damages, the creek partially unearthed 3 trees which are clearly prehistoric, the butts remaining fast in the uncut banks. They are located about $\frac{1}{2}$ mile northeast of the main square of the village and not more than 60 ft. from the E. C. & N. division of the Lehigh Valley railroad. (See Elmira sheet U. S. Geological Survey).

The largest tree originally must have been a fine specimen of forest growth, with a diameter of 25 or 30 in. Over 50 ft. have been uncovered. The next in size might have been 20 in. in diameter, while the diameter of the smallest could not have exceeded 10 in. They lie parallel within a distance of 10 ft. the tops pointing very nearly northwest. Excepting that the largest tree is forked about 10 ft. from the present top, there are no signs of branches.

The trees probably have been continuously water soaked since their burial, owing to the fact that they are below the normal creek level. The wood is very spongy to the depth of several inches and exhibits other evidences of antiquity. By taking hold of the end the writer was able to break the smallest tree without much effort. Upon being dried, however, the wood recovers a large percentage of its original hardness and strength. Wood taken from near the center of the large tree has undergone little apparent change.

A novice would have no hesitation in pronouncing the larger trees elms, owing to the odor emanating from the wood when wet. The smallest tree is a harder, darker wood and not so easily classified. A very small portion of the bark preserved appears to be that of a maple. Specimens of each have been submitted to Prof. Penhallow, of McGill University, Montreal, Canada, who is an expert on fossilized woods.

Subsequent rises in the waters of the creek have unearthed other trees. These have not been critically examined, but the fact was noted that the tops also point northwest. The depth of burial is about the same in each case, and the two facts suggest the possibility that they are remnants of an ancient forest, prostrated, perhaps, by a storm moving up the valley. Future floods will probably determine this point.

The formation in which the trees are found is purely local. It largely lies in the bed of the mighty river which drained glacial waters when the ice front was in the Finger Lake region of Central New York, but it is wholly the work of Newton creek and in point of geologic time immediately succeeded that glacial river. It is, in fact, a delta produced by the passing of the creek from one valley into another. This is accomplished with a sweeping curve which brings the creek to somewhat less than right angles with its former course. The present grade of the delta, which is 25 or 30 ft. per mile, precludes the idea that swamp conditions ever existed. Its approximate width is $\frac{1}{2}$ mile and the length $1\frac{1}{4}$ miles. There are evidences that large areas were covered with ice at times during its formation.

The material of which the delta is built may be roughly classified as follows: Fine black sandy loam (soil), about 12 inches; silt having an admixture of clay and sand and an occasional small pocket of gravel, about 16 inches; a blue mixture of clay, mud, gravel and sand, partially stratified, between 3 and 4 ft. Near the bottom of this the trees are found. Judging from several exposures, the average depth of the delta is about 6 ft. and the whole is underlaid by pure blue clay which conforms to the surface slope.

Prof. R. S. Tarr, of Cornell University, who is connected with the U. S. Geological Survey and who recently visited the locality, estimates the age of the buried trees at "not less than 1,000 years." After careful study, however, the writer believes that their growth and burial may safely be placed within the first 2,000 years which succeeded the Glacial Epoch. Based upon latest geological researches this would make their age 3,000 or 4,000 years. There are strong reasons for supposing that the uplands and hillsides were much less heavily forested at that time than when white men first invaded the country.

It may be added that there is an unusual amount of Pleistocene work in the Elmira and Watkins quadrangles and the cumulative evidence is clearly in favor of a much shorter length for the post-glacial epoch than some geologists are willing to admit.

F. O. JONES.



HEAD OF ZAMNA, CALLED BY THE INDIANS OF THE PRESENT DAY
"LA VIEJECITA"

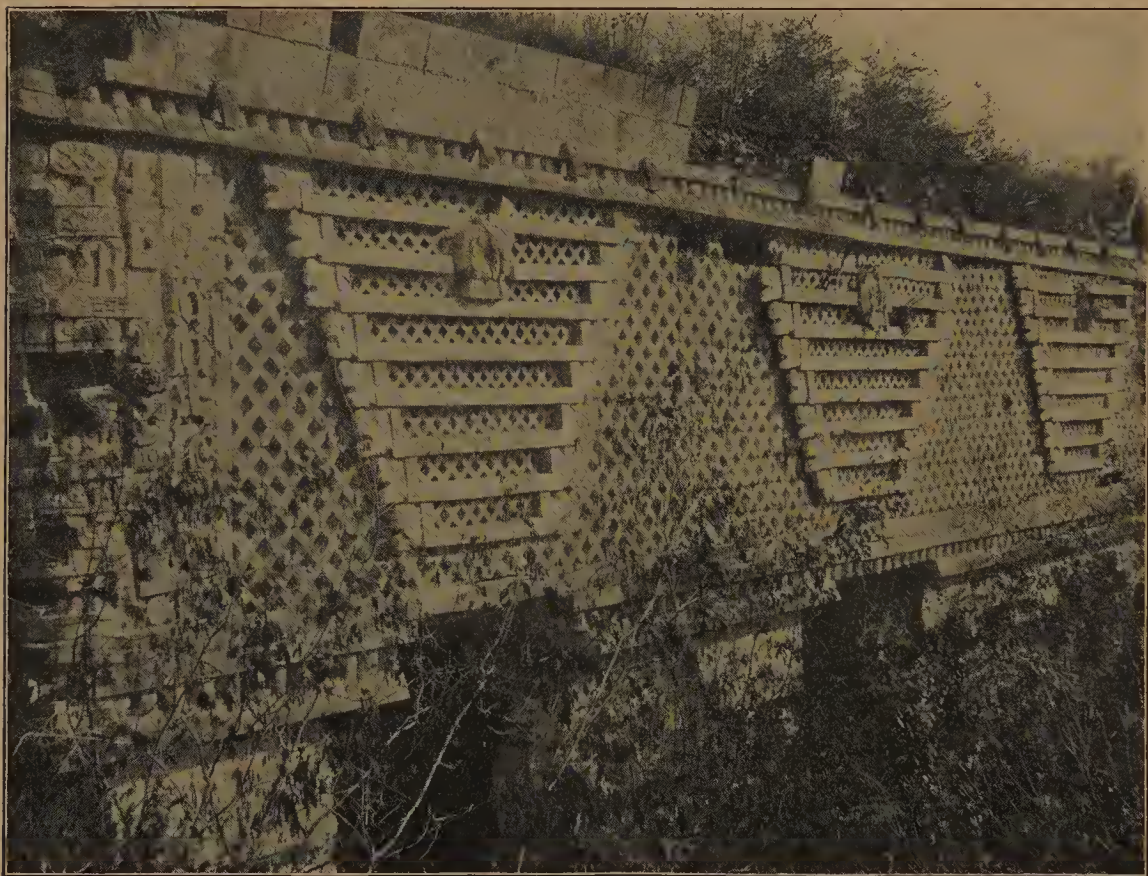
THE PYRAMIDS OF ZAMNA AND KABUL

LEGEND OF UXMAL (YUCATAN)

MANY years had passed since Cox (Noe) had escaped the deluge in his floating house, made of cedar and ceiba. His children were dispersed in all directions, and had peopled the world anew. Great water-ways had been formed in the course of time, and had separated the vast continents. Volcanic eruptions had buried the beautiful Atlantis, and the foaming waves of the ocean rushed over the wonderful island. The descendants of Cox drifted apart, and now were separated forever by the mighty sea, that washed the shores of the newly formed peninsula. "Ma-ha-ya" (the land without water) the weary wanderers had called it, when they rested there from their long pilgrimage, for no sparkling river greeted the eye of the thirsty. But nature, always kind to her children, created for them the "Zenotes," whose crystal like water abounds in wonderful freshness.

In peaceful solitude lived the children of Ma-ha-ya, the Mayas and their eyes had never beheld the face of a stranger, since the waters had severed Ma-ha-ya from the mainland.

And the years passed by,—too many to count them—when one morning a tall, kind looking stranger appeared in the valley of Uxmal. No one had seen him arrive, and when they asked him his name, he said: “Ytzen-Caan-itzen-muyal.” “I am the dew of heaven, and sky and clouds are my children.” With pitying eye he looked down



NEAR VIEW OF PART OF THE RUINS AT UXMAL

on the trembling race, stretched out his hands over the sick and infirm—and lo! the suffering and pain disappeared, and many returned from the valley of death, if the wonderful hand of the Healer just touched them.

“Stay with us, oh, Dew of the Heavens,” so spoke the chief of the Mayas, “stay with us forever, and be our father, oh Itzamat-ul.”

And the stranger remained long years with the Mayas, taught them to adore the great Zamná, the creator of mankind, and to erect large buildings of stone where Zamná might spend his days alone, and in silence, unseen by the people, but hearing their prayers and accepting their worship.

Many hundred feet high they were, these pyramids of the Ma-ha-yas, on the summit there stood the temple, adorned with the

heads of serpents and tigers, with leaves and with flowers, which skillful hands had formed from the "argamasa."

And every night, when the stars appeared in the heavens, Itzam-at-ul ascended the "stairs of the serpents, which led to the temple to pray there to Zamná. But one morning the sufferers looked in vain for the Healer. He never returned, for his soul had gone back to great Zamná, and he was sleeping forever down in the silent room of the stone house.

But the Mayas did not forget their Healer, and to keep his memory fresh in the hearts of their children, they placed his image in the walls of his pyramid, from where the gigantic head of Itzam-at-ul-Zamná still looks down on the ruins of Uxmal's vanished greatness.

Many other pyramids had the Mayas erected in Uxmal, but the greatest of all was the "Kabúl," where the hand of the Healer was painted in dark reddish color. In lofty height stood the temple, and the eye could not look without awe on those gigantic dimensions.

The Itzas and Ma-ha-yas are gone,—but the majestic ruins of their cities and temples bring down to posterity the story of the wonderful builders in the "Land Without Water."

SRITA. NATALIE VON SCHENCK.

LOS ARCOS, MEXICO.



A COMPREHENSIVE ACCOUNT OF THE EXCAVATIONS IN ASHUR FROM SEPT, 18, 1903, TO THE END OF FEBRUARY, 1905, *

FROM September 18, 1903, to the end of April, 1904, most of the excavating consisted of trial trenches. One such trench extended from the Ziggurra to the Palace; another through the southern part of the plateau, and led to the excavation of Temple A.

The real work began toward the end of April, 1904, with the excavation of the large mound of mud-bricks, the Ziggurra, and the immediate neighborhood to the south; and especially of the eastern plateau with its Parthian buildings and the large court of the Ashur temple Eharsagkurkurra. The north front of the Ziggurra was also laid bare. Further excavations toward the east were for the time prevented. A study of the ruins showed the necessity of excavating the north and east fronts of the north-east plateau. To the north work was begun on parts of the fortification wall in September, 1904.

*Translated and condensed by Mr. D. D. Luckenbill from the reports of the German Oriental Society for RECORDS OF THE PAST. The paper is a short resumé of the progress and results of the excavations up to date.

TOPOGRAPHICAL RESULTS

Under the head of Topographical Results the purpose is to bring together all the references to places and buildings known from other inscriptions and compare them with the new finds.

A. FORTIFICATIONS

Among the inscriptions referring to the Dûru or city wall is a Ziqatu (clay-phallus) with inscriptions of Ashirrimnishêshu which indicate that the Dûru, probably founded by Kikia, renewed by Ikunum (*ca.* 2000 B. C.) Sharenkate-Ashir and Ashirnimrari I, was restored by Ashirrimnishêshu.

An alabaster tablet of Adadnimrari I tells that "the large wall of the new city (?) which extends from the large wall of the inner city to the river, had been repaired by Puzur-Ashur, Ashurbelnishêshu, Erba-Adad, Adad— . . . and was restored by Adadnimrari I," and a clay tablet of Adadnimrari I (*ca.* 1360) tells of the restoration of the city wall on the side toward the stream which had been damaged by high water. A temenu (ziqatu-shaped clay objects) of Tukulti-Ninib I. tells of the restoration of the Dûru by Tukulti-Ninib I (*ca.* 1300) and of the building of a city moat (harisa) which had not hitherto existed. The excavations show one of the restorations of the wall which is probably the work of Ashurnazirpal (*ca.* 880 B. C.). If so it is the restoration of the Dûru mentioned in the so-called hunting inscription of Ashurnazirpal (I R. 28b 11) which tells of such a restoration by Ashurnazirpal.

The restorations of the southern wall by Shalmaneser II have been identified by the Ziqati of Shalmaneser II which were found in the uppercourse of the wall. These state that the city wall and the city gates were repaired and Ziqati presented by Shalmaneser II. Furthermore the so-called "Clay inscription of Shalmaneser II" tells how he restored the Dûru and Shalhu from the Gurgurri—city gate to the Tigris, and united both into a pilqu (?). The Dûru has the name "sa melammushu mâta katmu ("whose splendor katmu covers the land"). Also enameled bricks, and inscribed bricks of Shalmaneser II have been found in which he calls himself the builder of the Dûru of the city.

The Shalhu, mentioned above may be identical with the southern fortification, that is the wall of the new city (?).

The Kisirtu or Quay-wall is mentioned on bricks of Adadnimrari I, and on two burnt clay tablets of the same king. On one of the latter Adadnimrari I calls himself the builder of the Quay-wall along the river, and describes its construction out of limestone blocks, burnt bricks and asphalt mortar. The *kisirtu* is part of the *E-kal*, palace, of Adnimrari I. A clay tablet of Adadnimrari II states that Adadnimrari II son of Ashurdan, grandson of Tiglathpileser, great grandson of

Ashurreshishi (about 1050 B. C. restored the *kisirtu* of his predecessor of like name. On a stamped brick of Adadnirari V, Adadnirari, son of Shamshi Adad, grandson of Shalmaneser II calls himself the builder of the *kisirtu* of the temple of Ashur. This *kisirtu* has been laid bare for about 450 meters. The whole construction is out of limestone blocks with facing wall of brick toward the river, and brick wall continuations set vertically into the limestone wall "zur Verzahnung" all strengthened with asphalt and clay mortar, and can still be clearly seen. Different later restorations of this *kisirtu* of Adadnirari I, can be identified by the stamped bricks, the different formation of the bricks, and the different mortar used. Still no inscriptions have been found *in situ* for the restorations of Adadnirari II and V.

Part of the city moat (stadtgraben) has been found. This was built by Tukulti Ninib I, who cut it into rock bottom. In the hunting inscription of Ashurnazirpal (I R. 28b 6 ff) it is stated that, the ditch being clogged, Ashurnazirpal had it cleaned from the gurgurri—city gate to the Bab Diklat, or Tigris gate. Abullâni or city gates are referred to in an inscription of Ashurnazirpal, (I R. 28b 8 ff) where the abul gurgurri is mentioned as the starting point of the restoration of the Dûru and the city ditch. In a clay inscription of Shalmaneser II, [See above] the abul gurgurri is also mentioned. This gate, according to Delitzsch the "Metalworkers" city-gate, must be looked for in the neighborhood of the above mentioned bab Diklat. The Shalmaneser II clay inscription mentions further, the abullu sigurâte (abullu— large city gates), the abul Ashur (—?), the abul Shamash (—?), and other abullâni. However, nothing is known of these, nor of the bâb (gates of buildings) referred to in an inscription of Adadnirari I (IV R. 39b 2.) and in an Alabaster Tablet of Adadnirari I. The bâb ni-eshmati and bâb Daiânê, are both to be looked for in the neighborhood of the Mushlala of the Temple of Ashur [See below]. The Adadnirari I clay tablet mentions two bâb as termini of the *kisirtu*, and the Adadnirari I hinge-stone states that the Abusâte of the bâb of the god Anu and Adad were renewed by Adadnirari I.

The inscription of Ashurnazirpal (I R. 28b 24) states that the bâb Diklat was provided with large pillars, (a-sa-it-te rabî-te) by Adadnirari I. Ashurnazirpal improved this work. It is mentioned as one of the termini of the cleaning of the *Kisirtu*. The Shalmaneser II clay inscription mentions Ilu-ula the guardian of the city and Ilukidudu the guardian of his wall. The latter was renewed by Shalmaneser II, who mentions both in connection with his restoration of the Dûru.

The Mushlalu (Mushlala?) is mentioned in an inscription of Adadnirari I (IV R. 39) and on an alabaster tablet of Adadnirari I. The Mushlala, according to the former was part of the Temple of Ashur, and lay in the neighborhood of the gates bâb ni-eshmati and bâb Daiânê. It was restored by Adadnirari I. The foundation

of the Mushlalum belonging to the palace in Ashur was laid by Senacherib out of blocks of shadu stone, (mountain stone), according to a limestone block of Senacherib. Limestone blocks and corner stones of Asharhaddon tell us that Asharhaddon restored the bît Mushlala and laid its foundation with white pîlu stone. These blocks have been found, but the nature of the mushlala is still uncertain.



EXCAVATIONS AROUND TEMPLE A

B. TEMPLES

I. The Temple of the god Ashur E harsag (gal) kurkurra.

The following references to this temple have been discovered: A brick inscription of Irishum,—a dedication to Ashur,—but whether or not it belongs to the temple is uncertain; also a brick with the stamp of Shamshiadad, who calls himself builder of the Temple of Ashur. As mentioned above, there is reference to this temple in the inscription of Adadnirari I (IV R. 39); alabaster tablets and *Ziqati* of Shalmaneser I; a stone tablet in which Ushpia is mentioned as founder of the temple and Irishum and Shamshi Adad as restorers. The inscription states that in the time of Shalmaneser I a fire destroyed it and he undertook its restoration. An enameled brick, with inscription of Tiglathpileser II informs us that Tiglathpileser, son of Adadnirari, is the king who decorated the temple with enameled bricks; pavement bricks with inscriptions of Sargon from the Temple Kisallu; enameled bricks of Sargon; enam-



GENERAL VIEW OF THE ZIGGURRAT AT ASHUR



EAST FRONT OF THE ZIGGURRAT

eled *Ziqati*, dedicated to Ashur; a clay prism of Senacherib bearing a building inscription; limestone blocks of Senacherib—which state that the *kisallu* of Eshara the great temple of the gods has a foundation of white limestone—a building clay cylinder; a clay prism and an alabaster tablet of Asharhaddon.

Three of these building inscriptions of the Ashur Temple were found *in situ* and so give us the exact location of Eharsag-kurkurra. The great national temple lay at the northern point of the city, a

very favorable location. Three of its sides looked out over the land, the fourth was covered by the great Ziggurat.

Remains of the foundation and pavement of Shalmaneser's restoration have been found; portions of the enameled brick covering of Sargon's buildings, the pavement of the great court, and pieces of enameled brick and *Ziqati* of Tiglathpileser II's Kisallu have been found and the eastern side of Senacherib's Kisallu.

II. The Anu and Adad Temple.

Bricks inscribed and stamped Irishum, and dedicated to the god Adad were discovered in a canal which indicates that this temple was located west of the Ziggurat. In the prism of Tiglathpileser I (Col. VII Rawlinson) the building of the temple is described but we know nothing definite concerning its location. Two Ziggurats are mentioned in this, it is not certain whether the Ziggurat uncovered is one of them. The work of Shamshiadad II, son of Ishme Dagan was restored by Tiglathpileser I (Col. VIII). Nothing more is known concerning it. The hinge-stone of Adadnirari I tells that the abusâtu of the gate (bâb) of Anu and Adad are restored, but it is a question whether or not this gate belongs to the Anu and Adad Temple.

III. Temple A.

This temple was at first supposed to be the Ashur Temple, but we can now place it as post-Assyrian. After the city and the temple were destroyed, the Medes or Babylonians built a smaller Ashur temple to take its place. They also collected relics for the temple. Whether the temple bore the name Eshara, and was dedicated to Ashur cannot be said definitely. The temple resembles the *Babylonian style*, and not the *Assyrian* known to us from the Sargon Temple at Chorsobad. The temple remained during Persian and Parthian times in the form in which it was built.

IV. The Temple of Bêl, E-amkurkurra.

An alabaster tablet of Shamshiadad (I?) states that Shamshiadad built the temple of Bêl in Ashur, E-amkurkurra. Its location, however, is still unknown. Bricks with stamp of Tukulti Ninib I have been found in which Tukulti Ninib calls himself the builder of the temple E-am-u-kur-kur-ra of the new palace. The name resembles that of the inscription just mentioned. This building, if different from it, has not been found. Bricks, inscribed—of Ashurnirari I show that Ashurnirari built the temple of Bêl shipria. Whether it is identical with E-amkurkurra is a question. All the bricks bearing the inscription came from an old ravine.

V. Other Temples mentioned.

An Ishtar Temple by Tiglathpileser I and a Sin, Shamash, Marduk and Gula temple are mentioned but nothing more is known concerning them. The bît ti-ka-a-ti kisallu sa-ad-rum man-zaz Igige, of Senacherib says that Senacherib restored the "abode of the heavenly Angels." The location is unknown.

C. THE PALACES

We must bear in mind that E-kal, usually translated "palace" has quite a wide meaning in Assyria. From the inscriptions of Adadnirari I and Senacherib, we see that the word means *citadel*. By E-kal erini, butni, tarpi of Ashurnasirpal, we must understand something like "room" "Saal," as we [Germans] speak of "Marmor saal, Spiegel saal," etc., of modern palaces. [Blue-room of White House. So E-kal erini means "Cedar-room"].

Of the residence palaces the excavations have yielded a number of remains. Among these is the tarbas nisê "Völkerhof," "court of the nations" of Adadnirari of which inscribed bricks were found *in situ*; stamped bricks of the Palace of Shalmaneser I were found *in situ*, west of the great temple court, so that the palace must have been closely connected with the Ashur temple. Temple and palace are therefore inseparable, quite different from the Babylonian conception, where the Priest class plays such a role. In Assyria *the king* is also *high priest*.

Stamped pavement bricks of the palace of Ashurnasirpal were found *in situ* with many other antiquities, including pieces of alabaster lamassi [Lamassi are protecting deities in shape of bulls. (Stiergott)]. A later king restored this palace. In the neighborhood of the palace are found upright basalt and limestone slabs of Tiglathpileser I's bit erini and bit urkarini, the cedar and Urkarini house. Both these must have been near the palace of Ashurnasirpal, who also built a *but nu* and a tarpi (Tamarisk) house, a cedar and a Urkarini house.

A house for Ashurilumuballitsu built by Senacherib of lime and gypsum blocks has been located on the river, along the south-east corner of the Dûru.

The following Palaces are known only by inscriptions on bricks, etc. The palace of Adadnirari I, the palace of Tukulti Ninib I, alabaster tablet from the E. Zun of the palace of Tukulti Ninib I, bricks, etc., from the palace of Tiglathpileser I, Tiglathpileser II, Shalmaneser II, and Adadnirari V; stamped bricks from E-kal tapshuhti of Senacherib and E-kal salâli; stamped bricks from the house for Ashurnadinsum built by Senacherib; clay cylinder from the palace of Ashurbanipal, by Asharhaddon; inscribed bricks from the palace of Sinsharishkun.

D. OTHER BUILDINGS KNOWN ONLY BY INSCRIPTIONS

The following buildings are known only by inscriptions:—

Brick from *bit* [bit. . house] labuni of Adadnirari I; clay tablet from bit hiburni of Shalmaneser I; bit abusâti at gate of Anu and Adad, built by Adadnirari I; bit pagri (so-called "house of dead," lit. "corpses") of Erba adad, renewed by Ashurnasirpal.

The Tamlia or Terraces include some small terraces of Ashurnasirpal, the Great Terraces to the north, built by Ashurnadin ahi

and mentioned by Ashurnazirpal, and the Great Terrace of the new palace before the Kisalâte of Tukulti Ninib I which is mentioned by Ashurnazirpal. From these inscriptions we can see how much work still lies before the excavators.

E. GRAVES

We are still quite in the dark concerning the burial of Assyrian and Babylonian kings. The great effort put forth by the Egyptian Pharaohs to preserve their bodies, have no parallel in Assyria. It



SARCOPHAGI OF DIFFERENT KINDS

might seem from the inscribed bricks of Senacherib, referred to above, that Senacherib built what was to be an enduring burial place. In spite of these it is not a certainty. The evidence lies in such references as the following: Palace of Rest, Dwelling of Eternity, House of the Family firmly established, of Senacherib, etc., Palace of Repose, Kimah of Rest, Dwelling for Eternity of Senacherib, etc.

So far the graves excavated have yielded no monumental remains,—there are no inscriptions, and so the persons buried are nameless. Most of the graves opened and examined have been proved

to be Assyrian. The different kinds may be classified provisionally as (1) Vaults, (2) Sarcophagi, Jars, etc., in which corpses are in sitting posture, (3) "Stülper," Terra cotta trays inverted over corpses, (4) "Capsule," (5) Brick graves, (6) Potshered graves, (7) Earth graves.

1. Vaults of different forms and dimensions are found under ground made of burnt brick. Most of these consist of a main chamber and an entrance shaft. Occasionally there is a side chamber. A small *niche* for a lamp is always found. In every case there was more than one person buried in the vaults. The bodies lie with knees drawn up against the body and are directly on the floor of the vault. All kinds of drinking vessels were always found in the vault.



LOWER PART OF A BASALT STATUE OF SHALMANESER II

2. Clay Sarcophagi of several styles have been discovered.
 - (a) Jar sarcophagi, standing upright. Jars into which the bodies were pressed. Usually these are badly preserved. Children's graves of this kind, consisting of small footless jars are better preserved;
 - (b) High but very short tubs, in which the corpse was placed in a seated position;
 - (c) Tubs in one part, dating from post-Assyrian times were found in the palace ruins.
 - (d) Tubs in two parts. For convenience in burning these were cut in two while still wet. These are numerous.

There are also quite a number of sarcophagi which have been made by a combination of the above mentioned forms, or by variations. We have one in which the corpse was seated in a coffin of the brick variety, the foot end was removed and a jar attached to receive the legs which were stuck through.



BASALT STATUE OF
A GOD FOUND IN
THE RUINS OF THE
TEMPLE. *

3. Terra cotta trays were inverted over the corpse. These are poorly preserved.

4. Capsules. From the head and foot ends two pots are pushed over the corpse until they meet making a *capsule*.

5. Brick sarcophagi. Bricks are set up in such way as to make a kind of coffin for the reception of the corpse. These are seldom found.

6. Potsherd are used to cover corpse.

7. Bodies simply placed in ground.

It seems that various methods of burial were used side by side so that we cannot say one kind belongs to this or that period. So topographically they cannot be distinguished. Vaults are numerous in the neighborhood of the Ziggurat, but are also found elsewhere. In short, graves are found everywhere along the southern wall, under the Mushlalu, in the palace ruins.



VESSELS FOR OFFERINGS, ETC., FOUND IN DIFFERENT GRAVES AT ASHUR

* This statue, as Dr Messerschmidt of the Berlin Museum suggests, resembles the large statue of King Asurnazirpal, preserved in the British Museum,

BOOK REVIEWS

EDWIN MCMASTERS STANTON

TO fully grasp the beauty of the masterpiece from the hand of an artist it is necessary to view it from a distance sufficiently removed that the minute details may be blended together about, and thus bring out more clearly, the one striking figure that occupies the most prominent place in the picture.

The same is true when we attempt to study the historical significance of events in any epoch. It is now 40 years since the close of that gigantic struggle which had for its issue the shattering into fragments or cementing together into a dissoluble bond that grand structure, the union of the States in this, the greatest of the nations of the earth,—the American Republic. A study of those 4 momentous years would be incomplete without an analysis of the leading characters in the tragedy. The life of James Buchanan would end with the beginning of that struggle; the life of Abraham Lincoln, in its essential details covers but the 4 years of the war; the life of Andrew Johnson covers only the subsequent period of reconstruction; while the life of Edwin M. Stanton covers the whole, and when examined under the search-light, which Mr. Flower turns on it, reveals at this distance a majestic figure endowed with a strength of character and lofty purpose, with executive daring and resourceful ability, second to none in American history.

Edwin M. Stanton was Attorney-General in the Cabinet of Buchanan, Secretary of War in the Cabinet of Lincoln and Secretary of War in the Cabinet of Johnson. If it were possible to do full justice to this vivid picture, drawn by the master-hand of Mr. Flower, in a condensation of the most potent facts contained therein, it would show us Edwin McMasters Stanton, a weak and puny babe, the orphan offspring of poverty; an asthmatic from early childhood; a snake-charmer; an hypnotist and a votary of religion from his tenth year; an idealist, who took an oath at his father's knee that he would fight slavery till death; a youth who never played, idled, fished or hunted; a novitiate, who began the practice of the law before he was of legal age; a friend, who, with his own hands, dug open the grave of a young lady victim of cholera to make sure that having been stricken, destroyed and buried within three hours, she had not suffered the awful fate of inhumation alive; a defender, who swallowed poison in order to be able at a murder trial to describe its effect on the human system and thus save his client from the gallows; a testimony-gatherer who smashed the finest steamer on the Ohio river into the Wheeling

* *Edwin McMasters Stanton*, by Frank Abial Flower, illustrated, 426 pp. The Werner Co., Akron, O.

Suspension Bridge in order to show by incontestable evidence that the structure was a hindrance to free navigation; a lover, who maintained a nightly vigil for months over the grave of his first wife and shortly prior to his own death visited the sacred spot alone at night; a father who kept the ashes of his first child in a sealed urn at his bedside; an attorney-general, who prepared articles for the impeachment of his chief, President Buchanan, to be presented should there be no change in the attitude of his administration toward oncoming secession; a Secretary of War, who drew an emancipation proclamation long before Lincoln could be induced ("forced," Mr. Flower alleges) to issue it; a Cabinet Minister, who annulled all contracts for foreign made goods and supplied his armies with home-made products only; who took personal command of both army and navy for the capture of Norfolk and the blockade of the James river; who, when cooperation of the navy failed him, created an independent navy of his own of nearly 40 craft, which cleared the Upper Mississippi and captured Memphis; who conceived and executed the marvelous rescue of Rosecrans from a trap at Chattanooga; who revoked Lincoln's "permit" for assembling the insurgent legislature of Virginia after the fall of Richmond; who got Bishop Simpson "the giant of Methodism," Archbishop Hughes "the giant of Catholicism" and other great church dignitaries to come together in an inner room of the War Department and pray while he watched the progress of great battles that were raging at the front; who gave half of his entire salary for horses and drivers to stand ready night and day to take him on the run when errands of public importance demanded; who, although broken in health, stood resolutely athwart the path of Andrew Johnson's attempt to seize the army and annul the reconstruction acts of Congress; who dictated the Articles of Impeachment against Andrew Johnson; who argued his last case before Justice Swain, confined to his bed, just before he died; who brought on death by rising from his bed to go in person to the White House to thank President Grant for his appointment to the only office he ever wanted (Justice of the United States Supreme Court) the commission for which reached his home after his death; who received medical attention and medicines in his last sickness gratis from the War Department because he had no money with which to pay for them; whose last letter of any length was one begging for a loan "to keep the wolf from the door;" who asked to be permitted to rest at last at Steubenville, Ohio, his birthplace, by the side of his child and his kindred but who was nevertheless buried in a strange corner in Oak Hill Cemetery in the District of Columbia,—truly a wonderful presentation of historical facts.

THOMAS FORSYTHE NELSON.

BOOKS ON EGYPT

During the last few months there have appeared a number of books on Egypt. Although some of them are specially concerned with Egypt of to-day, yet Old and New Egypt are so closely identified that all works on this country are of more or less archæological interest.

Egypt, Burma and British Malaysia,¹ by W. E. Curtis, is a spicy account of the author's travels in those countries, in fact it is so spicy that the English language suffers in places. His observations on existing conditions are much more reliable than on archæological subjects, the latter being superficial and at times misleading.

To-day on the Nile,² by H. W. Dunning, Ph. D., contains a large amount of information which is valuable to the traveler in that country, as it mentions the important places to be visited in the natural sequence in which they should be seen. To those who cannot visit the country it gives a good idea of the people and the wonderful ruins. The archæological information is interwoven with the story of his trip in an interesting manner and the latest discoveries are referred to. The book, however, is lacking in that most important part—the Index.

From Charles Scribner's Sons we have two valuable additions to Egyptian literature, *A History of Egypt, from the Earliest Times to the Persian Conquest*, by J. H. Breasted, Ph. D., of the University of Chicago, and Volume III of *A History of Egypt* by N. M. Flinders Petrie, which covers the period of time from the XIX to the XXX Dynasties. This latter is imported by Scribner's Sons. Both of these books will receive further notice in a later issue of RECORDS OF THE PAST.



EDITORIAL NOTES

THE FIFTEENTH INTERNATIONAL CONGRESS OF AMERICANISTS:—Will be held at Quebec, Canada, from September 10 to 16, of this year.

ROMAN WALL IN LONDON:—In Jerry street, Aldgate, the demolition of some old buildings has brought to light a splendid vation. It was found about 8 ft. below the street level. It is about 8 ft. high and 9 ft. thick. There are 3 tiers of tiles, the other part specimen of the Old Roman wall of London in a good state of preser-

1. *Egypt, Burma and British Malaysia*, by Wm. E. Curtis, 393 pages and Index, Illustrated. Fleming H. Revell Co., New York.

2. *To day on the Nile*, by H. W. Dunning, Ph. D., Illustrated with photogravures, and map, 270 pages. James Pott & Co. New York.

being built in cubes, and the wall is a perfect specimen of Roman masonry. Great care has been taken to preserve the wall as a memorial of early London.

CONTRACTS OF THE TIME OF HAMMURABI:—Dr. Pinches in a paper entitled *Notes upon some Tablets of the Period of Hammurabi's Dynasty*, read before the English Society of Biblical Archæology, described a number of important tablets of that period. These are mostly contracts. One is concerning a loan of silver in which it is expressly stated that the silver lent it not to bear interest. Another refers to 4 slaves two of whom had been prisoners and were recaptured while attempting to escape from Babylonia by the road to Harran, the city where Abraham sojourned after leaving Ur of the Chaldees. He further calls attention to the evidence these inscriptions furnish as to the power and wealth of the temples of that time and to the piety of the people to whose spiritual needs they attempted to minister.

HYMNS IN HONOR OF TAMMUZ:—Dr. Theophilus G. Pinches has recently published a "preliminary" translation of some archaic Babylonian documents of the time of Hammurabi. The text consists chiefly of an appeal from Ishtar, or her priestesses to Tammuz; a frequent refrain is the sentence "Return my Husband." Ishtar is called Inanna. Tammuz is also entitled "son of the flute," an interesting mythological fact, and recalls the passage in the *Descent of Ishtar* where the returning Tammuz from the underworld was welcomed by flute players. Some of the chants specially alluded to Tammuz as a harvest or "corn deity."

FETISH IMAGES FROM KNOSSOS:—At Knossos, on the hillside beyond the Candia road, a late Minoan house was uncovered in which remains of a shrine containing fetish images were found. These consisted of natural stalagmites of quasi-human form, also a painted clay goat and other figures.

GREAT ANTIQUITY OF THE STONE AGE OF THE ZAMBESIA VALLEY:—In a recent issue of *Nature* [London] Mr. H. W. Feilden communicates some important observations on the occurrence of palæolithic implements on the Zambesi river below Victoria Falls. He comes to the conclusion that the implements and pebbles were deposited by the Zambesi below Victoria Falls when the river was flowing 500 ft. above its present level. He believes that when we can determine the time necessary for cutting this gorge by the rate of recession of the falls, we can gain an approximate determination as to the time when primitive man occupied the Zambesi valley.

ORIGIN OF EOLITHS:—The question as to the possible mechanical origin of eoliths without the assistance of man has been revived in Europe. In studying this question, Dr. Hugo Obermaier, of Paris, has made a large and extremely interesting collection of eolithic forms produced in the cement factory at Mantes. These

are depicted in *Man* for December and form a very instructive series. Mr. S. Hazzledine Warren also figures a number of "artificial imitations of Eoliths produced without designed flaking." From the facts brought out it is evident that great care is needed to discriminate the artificial from the natural, and possibly other evidence than the discovery of an apparently artificially chipped flint, is needed to prove the human occupation of a site. Doubtless localities where nature had fashioned large numbers of flints into forms easily adaptable to the needs of man, would be frequented by early races so that in localities where flints are numerous there would be likely to be a mixture of human chipped implements and rejects in the deposit of natural flakes.

BILL FOR THE PRESERVATION OF AMERICAN ANTIQUITIES:—Mr. Lacey introduced the following bill in the House of Representatives on January 9, 1906, which was referred to the Committee on the Public Lands and ordered to be printed.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of Government having jurisdiction over the lands on which said antiquities are situated shall, upon conviction, be fined in a sum not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment in the discretion of the court.

SEC. 2. That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected: *Provided*, That when such objects are situated upon a tract covered by a bona fide unperfected claim or held in private ownership, the tract, or so much thereof as may be necessary for the proper care and management of the object, may be relinquished to the Government, and the Secretary of the Interior is hereby authorized to accept the relinquishment of such tracts in behalf of the Government of the United States.

SEC. 3. That permits for the examination of ruins, the excavation of archæological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions, may be granted by the Secretaries of the Interior, Agriculture, and War, to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe: *Provided*, That the examinations, ex-

cavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums.

SEC. 4. That the Secretaries of the Departments aforesaid shall make and publish from time to time uniform rules and regulations for the purpose of carrying out the provisions of this Act.

PRESERVATION OF HISTORIC REMAINS IN FOREIGN COUNTRIES

The revival of interest in the preservation and scientific exploration of prehistoric remains is world-wide, and should serve to stimulate archæological investigations in America. It certainly is humiliating to learn that for the study of American antiquities one must go to England to find the first and in some respects the most important collection, namely, that of Squier and Davis, made in their explorations of the Mounds of the Ohio and Mississippi valleys in preparation of the first Smithsonian report. This great collection was purchased by Mr. Blackmore of Salisbury, England, and it now preserved in the Blackmore Museum of that provincial city. Although in a slightly different line it is proper to mention that within the past year the largest and most important collection of the unique fossil fishes of Northern Ohio has been purchased by the British Museum and forms one of the most attractive and instructive sections in their geological department. To study the *Dinichthys Terrelli* a citizen of Ohio must now make a pilgrimage to London.

In the extensive trip from which I have just returned, I have received a new impression of the importance everywhere attached in Europe to the preservation of the prehistoric monuments and to the educating power of archæological collections. The city of Glasgow is erecting a very large and commodious museum building, open to the public, and making it the receptacle of the archæological treasures that are found in that part of Scotland. The museum at York, England, situated within the ancient walls and within the enclosure of the ruined Abbey, is overflowing with relics of local interest referring to the early occupation of the Romans and the earlier settlement of that center by the Britains; while at Altborough, 20 miles away, local interest has preserved an area of 80 acres, which is covered with the ruins of a city that was the capital of Northern Britain before the Christain era. Numerous mosaics that served as the floors of houses and palaces have been uncovered and a museum of great importance built up in a small country village. The city of Hull has recently awakened to the importance of furthering other interests than those that are merely commercial and has erected a fine museum building, which is already overflowing with the relics that have been discovered in the vicinity. The most elegantly illustrated and finely printed book upon archæology in England has just been published by this Society, devoted entirely to the archæological remains in that

the Society, devoted entirely to the archæological remains in that portion of England.

Going to Denmark one is perfectly overwhelmed by the extent of the museum at Copenhagen containing all the treasures that have been excavated from the Kitchen Middens of the vicinity. But for comparison one finds all parts of the world represented. Every one of our United States has its collection upon its shelves. The museum at Stockholm is equally large and well arranged. Here we saw troops of children from the schools being conducted through the archæological department and instructed as to the significance of the various things on exhibition. The eagerness with which the children scanned the objects and absorbed the information was both gratifying and most suggestive as to the part that such collections may play in education.

The Hermitage in St. Petersburg is in all departments one of the finest collections in the world, while its archæological department is peculiarly rich, containing the best of the things which have been found in all parts of the empire. The collection of Greek remains from Kertsch is specially noteworthy. Here it was gratifying to see that everything was open to the public and peasants were mingled are obtained from excavations all over the empire. Here one will with tourists in about equal numbers as visitors. In Moscow the archæological collection is by no means so general as that in St. Petersburg, but is made more to serve the interest of a learned society.

Going down to Rostoff-on-the-Don we find a bustling commercial city, which has not yet awakened to the importance of a public museum, but in the person of Herr Riedel, the city has a most intelligent and enthusiastic collector, whose own house and yard are full of interesting objects of archæological interest. Passing around to the Crimea one finds that the great museum at St. Petersburg has by no means drawn to itself all the objects of value excavated from the ruined cities of that interesting region. Enough has been left to build up a large museum at Kertsch, whose interests are watched over by a very competent curator. At Theodosia there is an important archæological museum but of less extent than that of Kertsch. Public interest in such work, however, is shown by its possession of a gallery of paintings of great value, which has been bequeathed the city by one of its public spirited citizens. On the outskirts of Sevastopol, the ancient Greek city of Chersonese is being excavated, and enough of the valuable material is left to fill a large and very interesting museum. This too is superintended by a most capable curator, who is overseeing the explorations.

In the city of Constantinople the museum is one of the most important objects for a tourist to visit. Occupying at first an old palace, the Government has recently erected a very large and commodious building on purpose to contain the best of the objects that are obtained from excavations all over the Empire, here one will

find the most significant discoveries from Babylonia, Palestine and Syria and of the numerous centers of Greek settlement in Asia Minor. Though the Government has been very generous in giving duplicates and objects of secondary interest to other museums in all parts of the world, Constantinople must be the center to which students will always have to go to get a comprehensive view of the explorations that are being carried on in the innumerable centers of ancient civilization in the Ottoman Empire.

Cairo is a similar center for the preservation of the objects which have been found in the Egyptian tombs and temples, and now a costly building erected in the center of the city displays these in most accessible form.

At Athens again one finds a National Museum, which is the pride of the city, while efforts are made all over the country to preserve the original objects which can remain in place.

Coming to Italy one finds at Palermo, Naples, Rome and Florence, museums not only of mediæval and classic art, but of that of prehistoric man. At Florence, especially, everything found of Etruscan remains is brought to the archæological museum, which stands by itself and in many respects surpasses in interest the Pitti and Uffizzi galleries.

On coming into France one finds peculiar interest in local museums. The Great Museum at St. Germain, of course, is preëminent, but in all provincial cities one will find local museums which are the pride of the people and serve an important purpose in strengthening the patriotic sentiment of the nation. We barely notice as having come under our own observation the museums at Amiens and Abbyville and Calais, and in Belgium those at Brussels and Leige.

On crossing the Channel one need say nothing of the immense British Museum or of the museums at the Universities of Cambridge and Oxford. It is more in place to notice that at Brighton the museum is one of the principal centers of attraction in that celebrated watering place, and the prehistoric section of it is by no means the least important part of the collection.

It is proper to mention in this connection that 5 years ago in crossing Asia, we found local museums of great interest to the people at Vladivostock, Khabarovsk, Blagoveyschinsk, Irkutsk, Yeniseisk, Minusinsk Tashkend, Samarkand and Tiflis.

Indeed it is our conviction that throughout the Old World the enlightened nations are considerably ahead of the United States in perceiving the importance of preserving the relics of the early races, and of making them a means of popular education. The present effort to secure the preservation and systematic exploration of the relics of prehistoric man in America by Federal Legislation is a most hopeful sign and we trust will not be defeated in its purposes by too long delay. Through the rapid opening up of our Western Territories, every year increases the risk of suffering irreparable loss through the reckless work of irresponsible hands.



PART II



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D. D., LL. D., Editor



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PROF. F. W. PUTNAM, Curator of Peabody Museum, etc., Cambridge, Mass.

PROF. MARSHALL H. SAVILLE, Curator of Mexican and Central American Archaeology in American Museum of Natural History, of New York City.

MR. WARREN UPHAM, Secretary of the Minnesota Historical Society.

FEBRUARY, 1906

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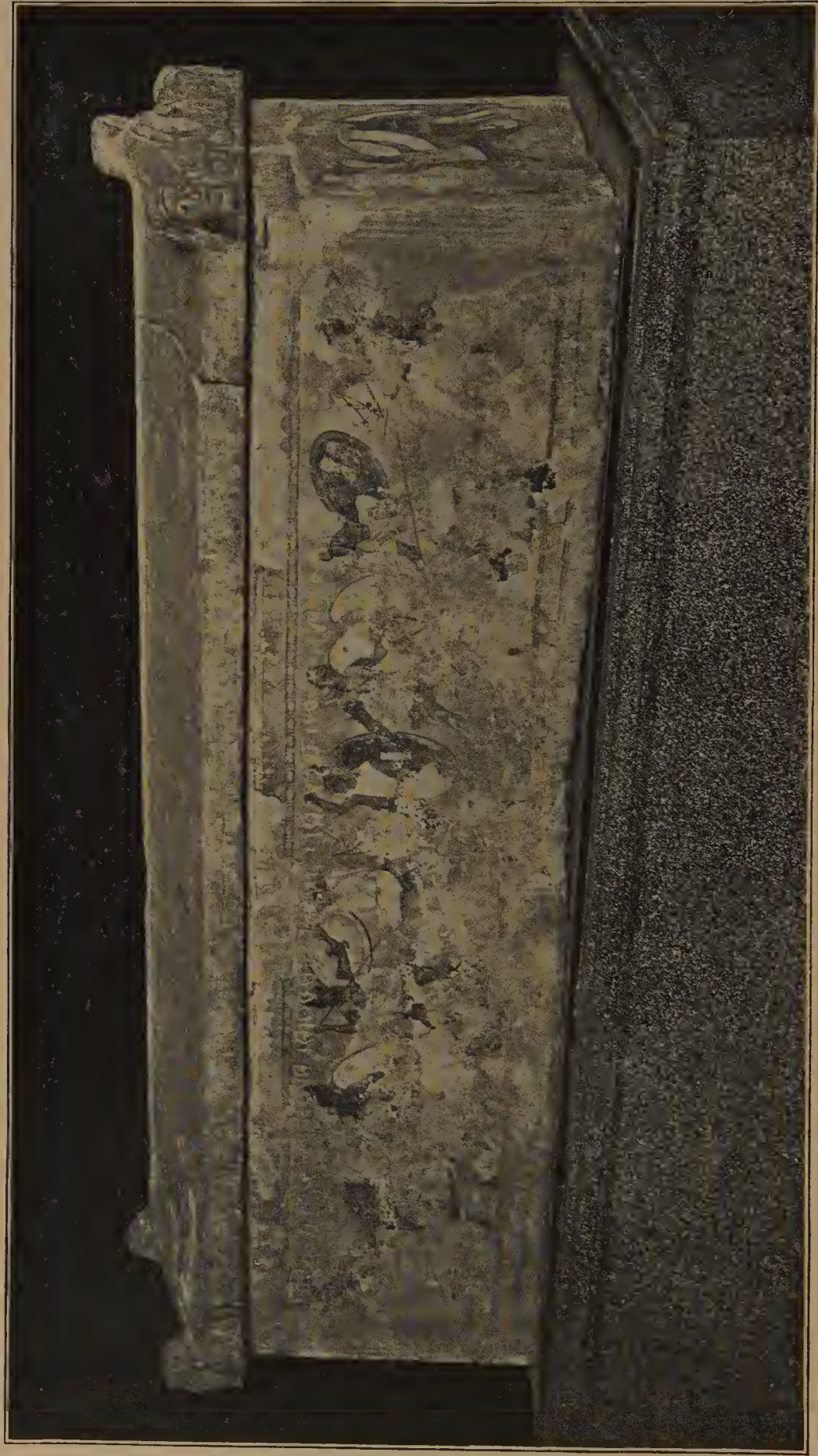
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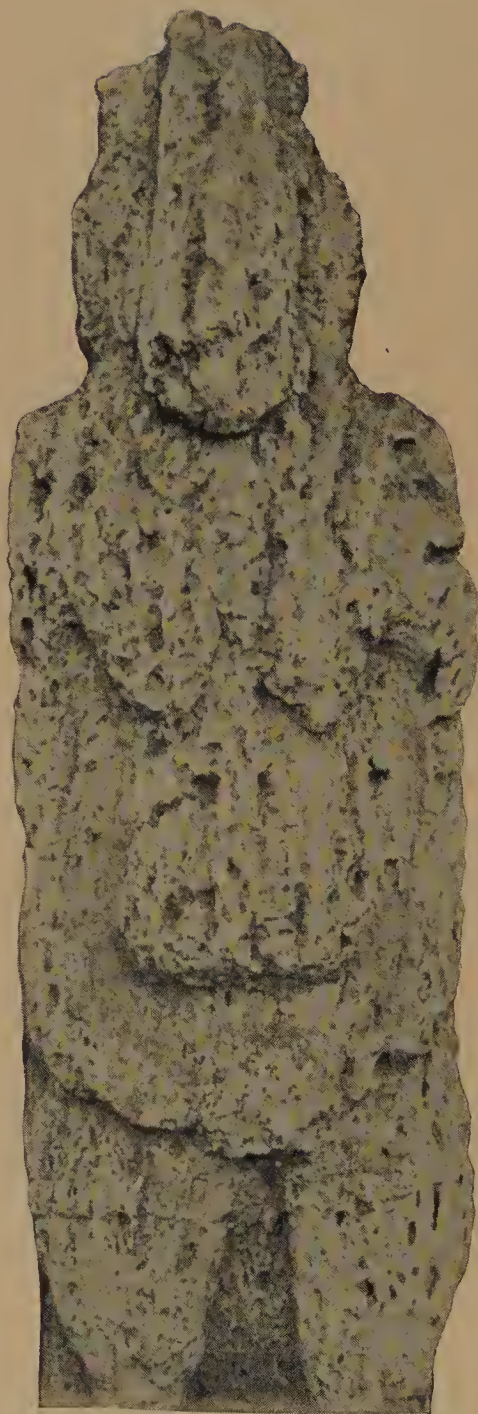


STONE EFFIGIES OF SOUTHERN RUSSIA

IN THE middle and the south of Russia there are generally to be found standing in each of the large Museums and in fact in many villages and public gardens rough hewn stone figures representing almost exclusively female forms. In most cases the upper part of the body is bare, and nearly always in the hands, which are held below the stomach, there is a little casket. The general impression which the appearance of such a figure awakens in us, is that of the corpse of a dead woman. The little casket makes one believe it was the receptacle of those objects which the religious customs once required should be given to the dead.

Of the origin and makers nothing is known and their meaning has never been definitely ascertained. To judge by their appearance they cannot, in any case, be older than 1000 years. For example, in my possession there is a stone figure [see page 36] which is made out of shell-stone—a composition of shells and limestone. This material is not very durable and yet there is plainly to be recognized at the waist, a comb, a mirror, and a bodkin or knife. If one considers that these figures always stood out in the wind and all kinds of weather it can be assumed that their age is less than 1000 years.

One theory is that these figures represent goddesses. But a careful perusal of Russian mythology shows no existence of goddesses in the belief of the old Slavics. The following Slavic gods are



FEMALE IMAGE OF SHELL-STONE

known to us: Perun, the god of Thunder. He was considered the mightiest of all the gods and his wooden likeness stood in the Palace of the Prince of Kief before the shrine of which sacrifices were offered up. Not only animals but women, children and men were sacrificed.

The following gods are also known to us: Woloss, Chorss, Daschbog, Stribog and Mokosch. It is without interest to mention their different peculiarities here, as we have only to prove that goddesses had nothing to do with the Slavic faith and therefore no stone figures could have been constructed in honor of them. Many estimate that the stone figures are from 800 to 900 years old. Should this be correct, and I believe it is, we find that Christianity had already been introduced into Russia. Nine hundred and eighty-eight is the historic year in which Vladimir was baptised. He destroyed the image of Perun in Kief and erected on the site the church of the Holy Basilus.

Christianity spread altogether very slowly and we find heathen customs existing several hundred years afterwards. It was particularly difficult for the first priests to fight against the custom of polygamy which had existed as much with the princes as among the people generally. Vladimir before his baptism had 8 wives and 800 concubines. The period

from the date of the introduction of Christianity to the fall of the Tartars in the year 1224 was not sufficiently long to improve the morals of the people. They still held to polygamy and to this custom the Tartars themselves made no exception. In 1313 the Tartars became Mohamedans and were by their religion forbidden to make images either by painting or sculpture. At any rate the Tartars did not bring these weighty stone figures with them and it is equally certain they were

not their originators. It is at the same time impossible to consider the figures as the work of any particular Russian tribe for they are to be found scattered over nearly the whole of Russia without respect to the race or culture of the inhabitants in the many different districts.



STONE IMAGE FROM SOUTHERN RUSSIA

If we keep this fact in view, we come to the very logical conclusion that the making of these figures was a general idea and taking into consideration the age to which the figures must belong, we find that at that time only Christianity linked the different tribes together and therefore Christianity must certainly have had some connection with the stone figures. As it is proved that polygamy was customary even after the advent of Christianity and according to conscientious historians the custom existed that the wives at the death of their husbands were buried with them (if dead or living is not known) so we

come to the only natural and possible conclusion that here we have to seek for the explanation and reason for the vast number of large stone figures of women. Herodotus, who lived for some time in Olbia, now called Nikolaew, describes this custom, saying that the wives at the death of the husband were buried with him. In many graves that have been opened, there have been discovered not only the skeletons of women but those also of horses.



GROUP OF STONE FEMALE IMAGES

That the Slavics permitted the women to suffer death too when the husband died is maintained by many writers of which the following are a few: Mauritius, Bonifacius, Ybn Dost, Massudi, Ybn Fostan, Drakonus, Leo Titmar, all writers of the VII to XI centuries.

That the wives had to forfeit their lives at the decease of their husbands seems to us revolting and cruel, but we have to consider that the people of this period were very savage and cruel, and treated their wives very badly. Horace mentions this in his Ode to Lyce, which commences with the following words: *Extremum Tanaim, si biberes Lyce nupto viro saevo*, etc.

The men fearing most likely that when ill, they would be badly nursed or wholly left to perish, probably made this custom, namely of killing the wives at the death of the husband, so as to secure good nursing in case of sickness and also to prevent illnesses ending so

often fatally. This custom would thus represent to the men a primitive sort of life insurance.

After the advent of Christianity the priests naturally endeavored to do away with this barbaric custom and at the same time persuade the men to treat their wives better and the wives to care better for their husbands and then it was considered to be sufficient that the wife instead of her mortal body should substitute her stone figure. Also it appears probable that the priests consecrated the sculptured figures and sold them. In the accompanying illustration taken in Red street, Yekaterinodar, the central image, among others, shows a figure with a cross on the breast. This cross proves that the date of the hewing of the figure and the coming of Christianity had something in common. The figure is most likely that of a Christian, who after the death of her husband became a nun and according to the old custom offered up her stone figure as a sacrifice on the grave of her husband. And so this, the exact analysis of the subject clears the way to the only acceptable explanation of the origin of these much discussed stone figures.

The supposition that these figures were once grave-stones appears to be without foundation. The women of that period occupied such an inferior position that it is scarcely to be believed that grave-stones would be erected to them. The few male stone figures may possibly have been erected in memorial. The varieties of the stone figures, for instance women with long hair done in a plait sitting and standing, have no important significance.

The different times and places have naturally been responsible for some little alteration in the design.

VLADIMIR RIEDEL.

ROSTOV-ON-THE-DON, RUSSIA.



RESEARCHES IN PALESTINE

THANKS to the man with the pick and the spade, the ancient civilizations of the East are becoming better and better known to the scholar of to-day. A hundred years ago, the cities of antiquity were hidden away beneath the sands of time, and no man in all the world could read their languages or depict their history. But now much has been discovered in Assyria, Babylonia, Egypt and Palestine, that is of inestimable value to the archæologist, the philologist, the historian and the student of the Word of God. "Those distant oriental countries which formed the significant scene and back-ground of God's dealings with Israel, as a nation," are giving up the secrets of their life and the records of their doings, and their "priceless treasures of the past" are now lending a helpful hand in the interpretation of

the Old and New Testaments. We are able to study sacred history and prophecy "in the clear light of contemporaneous evidence" and as a result of what has already been found, the Bible has become in many ways a new book.¹ Difficulties once regarded as insurmountable have vanished. The light having been turned on, many a dark and obscure passage has blossomed into beauty. Destructive critics have frequently been put to rout, honest skeptics have had their doubts swept away, and devoted Christians have rejoiced in the strong confirmation which science has furnished their faith. In the Providence of God, let us say, and in the very nick of time, as it seems, when the keenest criticism is waging its fiercest battles against the strongholds of the faith, these silent witnesses from the past have arisen from the dust where for ages they have slept, only waiting their day of opportunity, and now they bear testimony to the trustworthiness of the men of God who were moved to write the Holy Scriptures. Verily, "the very stones have cried out."

Not only are the students and scholars of the world greatly delighted at what has been found, but the public at large is coming to be interested in what is being dug up. This is plainly seen from the *Babel and Bible* incident. On Jan. 13, 1902, Prof. Friederich Delitzsch delivered his now celebrated lecture, "in the august presence of the Kaiser and the Court." Such was the interest thus aroused that voluminous replies, some running even to a ninth edition have already formed a distinct literature upon the subject. This is true for two reasons. The splendid civilization of those ancient days has been unearthed showing what advancement the world had made, even at that remote period. When one sees the actual correspondence of a great business firm, or the letter of a wife to her absent husband, telling him that the children are well, he is able at once to understand that those people had gone a long way in what we call modern progress. And when we understand that the ruins of Cuthah have been definitely located in the mound of Tell Ibrahim, a little east of the road from Bagdad to Babylon, and half way between the Tigris and the Euphrates, and that a tablet expressly states that the local deity was a god called Nergal, we have not only a side-light on the transportation by Sargon of men from Babylonia, Cuthah and other places to the homes of the exiled Hebrews in Samaria, but we also have evidence from an outside source of the exact statement of 2 Kings 17:30, a sort of confirmation, for which as Dr. Delitzsch says, we ought to be truly grateful.

Naturally one turns to Palestine, the home of Israel, with the hope of finding there, more than anywhere else, that which will be of help in understanding the Bible. This hope, however, has not as yet been fully realized.²

¹ Prof. Sayce says, "we know almost as much, in fact, about the Babylonia of the age of Abraham as we do about the Assyria of the age of Isaiah, or the Greece of the age of Pericles."

² Indeed, as Benzing says, "Palestine research is but a child of the century just closed, the systematic exploration of the land in all its aspects beginning, properly speaking, with the foundation of the Palestine Exploration Fund, in the year 1865," although Robinson, Tobler and others had done a great deal before that time.

The reason for this is not far to seek. The land has always been the Holy Land and the city has been the Sacred City, at least to the adherents of three of the world's greatest religions, Judaism, Christianity and Mohammedanism. Christians have gone to Jerusalem, from the beginning, as to a shrine. The fact that they could pray on sacred soil was, they believed, meritorious and their doing so brought to the fortunate many indulgences. Their whole purpose in going was purely religious, as with the pilgrim of to-day. They were not there for scientific investigation, but to find the places where sacred events transpired. This necessarily caused the rise of traditions innumerable, for the monks, urged on by the demands of the pilgrims, were continually finding new holy spots, with the result that, as the years went by, the number was greatly increased. Tradition, therefore, is all upon which many so-called sacred places of to-day can rely for proof of their identity. If these traditions were unbroken it would not be so bad, for tradition is often good evidence. But in this instance, many of the traditions were manufactured and were of very late origin as well. Besides, there were no traditions for the first few centuries of the Christian Era. The early Christians were looking not so much for the Jerusalem that now is, as for the Jerusalem that is to come. They cared not so much for the place where Jesus was, as for the place where he will be, when he returns to earth. Not until after the days of the persecutions did they begin to esteem sacred the places connected with the life of our Lord. Thus there is a gap of nearly three centuries between the rise of the oldest tradition and the days in which Jesus tabernacled in the flesh. This fact alone renders almost valueless many of the traditions that have to do with the sacred places of Palestine. And what is more, the late traditions have so covered the land with their web of sanctity, that it has been very difficult indeed to dig through them sufficiently even for scientific investigation. It has been a battle royal, this struggle against tradition, and a battle not yet finished, but necessary to be fought, that research and exploration may have a free hand in presenting to the world what the land may possess that will throw light upon the Book.

Another reason for the comparative paucity of results, is the fact that, owing to the fanaticism of the people and the attitude of the government, permission to explore was for a long time hard to obtain. And even when firmans were granted, they were usually for but a short period, with no certainty whatsoever as to their renewal, to complete any work that had begun, but that remained unfinished. It is only during the last few years that the willingness of the government has made it possible for much work to be done. Prior to that time, what was found was usually run upon, as it were, by accident, or was discovered by the indefatigable watchfulness of men, who, despite the difficulties, were determined to do all in their power to see everything that would help to understand the ancient city. As an illustration of the accidental find, we have but to remem-

ber the Siloam inscription, which, after the tunnel had been at least partially investigated by many great explorers and students, "revealed its treasure to a runaway schoolboy." The story goes that when the boy's teacher, Dr. Schick, was in the act of administering the well-earned punishment, even while his hand and the rod were uplifted the boy, in sheer desperation to find something that would mitigate the penalty, chanced to mention what he had seen, whereupon the good archæological schoolmaster left the birch in the air and rushed at once to see this most remarkable find. Whether this story is actually true or not, or however much it may have grown in the telling, it illustrates the great assiduity with which Dr. Schick and many other men have labored, and shows the great debt which the world owes them to-day.

Still a third reason is to be noted in the fact that Jerusalem has so often been destroyed. To say nothing of earthquakes, of which there have been several, George Adam Smith enumerates about 40 different sieges, occupations and devastations which the Holy City has had to endure.¹ Following many of these destructions were also many attempts to rebuild and restore that which had been so ruthlessly destroyed. It is said that no less than 8 different Jerusalems have been built, each upon the ruins of all that preceeded, so that the original city was, because of all this, in some places, at least, more than 100 feet below the streets of to-day.² To go down therefore, to the level of the first Jerusalem would be to undermine the buildings of the present Jerusalem, a thing manifestly impossible not to mention the expense it would involve, if such a thing could be done.

Two other reasons were given in an address delivered some years ago, in Jerusalem, by Canon Tristram. He said that the difference between the results obtained by excavations in Palestine and those made in other places, may be accounted for by the fact that Egypt used granite and Assyria used burnt clay, both of which were practically imperishable, while Palistine used soft, friable limestone or wood, both of which are exceptionally destructible. Also, that in Egypt, the dry atmosphere and the equally dry and preserving sand have kept in a wonderful way for thousands of years, much of the splendid work of the past, while the alternate cold of the winter and almost unbearable heat of the summer, in Palestine, have had the opposite effect.

Now if we add to these facts the further fact, that the Israelites were not a people given to art, in any sense of the word, we are forced to admit, not only that such splendid finds as are continually brought

¹ The Romans not only destroyed the city, but they also tried to wipe every evidence of its former location from the face of the earth, "even sowing the site with salt."

² Dr. Merrill tells us that the ancient city was, at the Jaffa Gate, from 10 to 15 ft. below the present city. At the Damascus Gate, he says it was 25 ft. below the surface of to-day, while at the southeast corner of the Temple area, there is an accumulation of 70 ft., at the southwest corner, 90 ft., and at the northeast corner, 125 ft. of rubbish. Petrie found that at Lachish, the depth of the debris increased at the rate of 5 ft. per century. That rate would easily account for the great depth to which ancient Jerusalem has been buried.

to light in Egypt and Babylonia, have not yet been made in Palestine, but what is more, we can feel pretty sure that such royal tombs and magnificent temples and "ostentatious inscriptions" as those countries furnish, will never be found in the vicinity of Jerusalem.

But, while all this is true, let no one imagine that nothing of interest has been found in the Holy Land. Comparatively speaking, we may say but little has been discovered. But if we think of what has been accomplished, without reference to other countries, we shall realize that a great deal has been unearthed from which much information has been obtained. We are richer by far in Biblical knowledge, because of the work of Robinson, Tobler, Conder, Wilson,



ROBINSON'S ARCH, JERUSALEM *

Warren, Schick, Petrie, Bliss, Macalister and others, who have brought to light the various finds of Palestine, some of the most important of which may now well claim our attention.

Many questions of interest and importance, in connection with Jerusalem itself, have been presented to the archæologist for solution. And while some of these seem to have been settled, others still claim the attention of those who seek the truth. One of these questions is the exact location of the ancient city.

The first mention of Jerusalem, that we have any record of, is in connection with Melchizedek, King of Salem, if we adopt the view which makes the Salem of Gen. 14:18 identical with that of Ps. 76:2, and therefore the same as Jerusalem. Thus we see that at the time when Abraham had his home in Hebron, Jerusalem was already in existence.

* For the illustrations in this article we are indebted to the Palestine Exploration Fund.

The next glimpse of that ancient city, which has as yet come to light, is seen on 8 tablets found at Tell el-Amarna, among the letters which Amenophis III. and Amenophis IV., Kings of Egypt, received about 1400 B. C., from Abd-Khiba, King of Jerusalem. It seems, from that correspondence, that while Jerusalem was an important city and at the head of considerable territory, she was at the same time subject to the ruler of Egypt. But nothing is learned from those letters that will tell just what ground the city covered.

No more does Jerusalem appear, until the time of the conquest, when she is seen as the strong city of the Jebusites, too strong to be taken, and remaining secure in her fastness until David, bold, brave warrior that he was, succeeded in wresting from them their important and hitherto impregnable stronghold.

But the question still remains, "exactly where was that ancient stronghold?" Until the last few years, at least from the time of Constantine and probably from the time of Josephus, it has been thought by all that the City of David was on the western hill of the present Jerusalem. But, almost 40 years ago, the theory was advanced by Fergusson, that down to the destruction of Jerusalem by Titus, the name Mount Zion was applied, not to the western hill of the present city, but to the northern part of the eastern hill, that on which the Temple stood and which has always been known as Mount Moriah. This new view, with the change of Zion from the northern to the southern part of the hill, has been vigorously defended for a quarter of a century or more by Birch and others, and as vigorously attacked by those who held tenaciously to the traditional view. The result is, that now it is pretty generally conceded that the stronghold of the Jebusites, later known as the City of David, was on the southern part of the eastern hill, and therefore that the name Zion does not belong to the western hill, as was held for centuries, but to the eastern hill of Jerusalem. In other words, the names Zion and Moriah are but different names for parts of the same eastern hill, upon which stood the Temple as well as the City of David, and the palaces of David and Solomon.

This eastern hill is one of the two long narrow tongues of land that run down from the plateau on the north, and that furnish the location for the Jerusalem of to-day. It has the deep and precipitous valley of the Kedron on the east, and the Tyropœon valley on the west, and it comes to a point, on the south, where these two valleys join, just below the Pool of Siloam. The hill is 108 ft. lower than the western hill, and was separated from it by the Tyropœon valley, which itself was 45 ft. lower than the present surface of the ground, at the south-west angle of the Temple area. Three transverse valleys crossed the hill originally, thus giving 4 different elevations. That farthest north was Bezetha. Next, towards the south, was Moriah, where the Temple stood and where the so-called Mosque of Omar now stands. South of Moriah was Ophel, and still further to the south, on the extreme southern end of the hill, was the City of David.

If we examine some of the arguments advanced by those who have been called the Ophelites, we find that the City of David is called in the Bible by 3 other names as well. In 1 Kings 8:1 and 2 Chron. 5:2 we note that the City of David is called Zion. In 2 Sam. 5:9 and 1 Chron. 11:7 the Stronghold is its name, and in 2 Sam. 5:7 and 1 Chron. 11:5 it is called the Stronghold of Zion. Now if things which are equal to the same thing are also equal to each other, it must be admitted that Zion, the Stronghold, and the Stronghold of Zion are equal to each other, and that each is the same as the City of David. This is what Birch has called the A. B. C. of Jerusalem topography, and it certainly shows that if one of these names can be located, then we shall know the situation of all. The topographers now agree that the Temple stood somewhere within the limits of the great area, known to-day as the Haram; that is, that the Temple was, without question, on the eastern hill. But the question remains, was that hill or any part of that hill called the City of David? It seems from the following passages that the City of David or Zion was south of the Temple, on the southern part of the eastern hill. The Temple was built, as we know, on the threshing-floor of Araunah 2 Sam. 24:24f. But, in going to that threshing-floor, David "went up" from his place of abode 2 Sam. 24:18f. Likewise, Solomon, in taking the ark from the City of David, which was Zion, brought it "up" to the Temple, 1 Kings 8:1. Again, to go from the City of David to the house which Solomon built for Pharaoh's daughter, one had to go "up" 1 Kings 9:24, and, to go from that house to the Temple, he had still to go "up" 1 Kings 10:5 if that is the correct translation. These passages seem to prove indisputably that the Temple was on higher ground than the City of David or Zion. If the topography be examined, even to-day, with these facts in mind, the conclusion is forced upon us, that the City of David could not have been on the western hill, which is much higher than the eastern, but that it was south of the Temple, on the eastern hill.

But there is another line of argument which reaches the same conclusion. In 2 Chron. 33:14, we learn that Manasseh built a "wall to the City of David on the west side of Gihon in the Valley" and with it "compassed Ophel about." If we agree that Gihon is the present Virgin's Fountain, which is generally admitted, its situation at the eastern foot of the hill of Ophel, in the edge of the Valley of the Kedron, seems to make, in view of this passage, the location of the City of David on the eastern hill a necessity, for that wall would mark its boundary; and by comparing 2 Chron. 32:4, 2 Chron. 32:30 and 2 Kings 20:20, we find the western boundary as well. For, as Bliss has pointed out, that conduit is probably the rock-hewn tunnel, leading from the Virgin's Fountain to the Pool of Siloam, which is west of the southern end of the eastern hill. This same view, it is claimed, is confirmed by Neh. 3:15f and Neh. 12:37, which passages seem to indicate that "the City of David was approached by a flight of steps

from a gate in the vicinity of Siloam." These passages, it is thought, place the house and the sepulchre of David, as well as the stairs of the City of David, between Siloam and the Temple, that is, on the hill known as Ophel. As early as 1877, Birch said, that by excavating, that gate those steps ought to be found in the neighborhood of Siloam, and in 1894 Bliss unearthed what he believes to be their remains.

By way of confirmation, a few other points on which the Ophelites rely may also be mentioned. The stronghold of the Jebusites and the City of David, as well, would naturally be located near a water supply. But the western hill has no such supply to-day, and there is no evidence that it ever did have. The Virgin's Well or Gihon, in the valley at the east of Ophel, is the only fountain in that vicinity. If it be objected that that pool was outside the city, it must be remembered that an ancient underground passage 1708 ft. in length, and referred to above, has been found, by which the water was brought inside the city, so as to be accessible in case of siege.*

Besides, the eastern hill, although lower than the western, could be more easily and more strongly fortified than the western hill, because of the fact that a small valley ran across the hill, north of the City of David, from the Kedron valley almost to the Tyropœon. Thus the southern part of the hill was naturally a sort of triangular mound, a stronghold within itself, and readily furnished just the place the Jebusites needed for their citadel. David was not the man to abandon such a splendid location as that. It is also claimed, from 2 Kings 18:17f, that the Assyrian officers stood by "the conduit of the upper pool" because it was near the king's house. Once more, it is said that Ezek. 43:7ff shows that the Temple was defiled because of the nearness of the bodies of the kings, which, as we know, were buried in the City of David.

Now, if due consideration is given to all these arguments, it seems that their combined force is sufficient to establish the fact, that the City of David was on the southern part of the eastern hill, and that Zion, the Stronghold and the Stronghold of Zion, are but other names for this same City of David. It is true that Conder has fought this view with vigor. Warren, in 1871, wrote "the principal difficulty I find is that in the book of Nehemiah, the City of David, the house of David, and the sepulchre of David, all appear to be on the south-east side of the hill of Ophel, near the Virgin's Fountain." Yet, in 1885, he said "it does not seem to me to accord with the other accounts;" and again, "such a position for Zion appears, at first sight, to be out of the question." On the other hand, Robertson Smith says "a third view places the City of David on the southern part of the Temple hill, and this opinion is not only confirmed by the oldest post-biblical traditions, but is the only view that does justice to the language of the Old Testament." Wilson says "this passage (Neh.

* Another rock-hewn shaft has been discovered by means of which those inside the walls could, in case of necessity, reach the waters of Gihon and there was a third channel which ran above ground from Gihon to Siloam and which, it is thought, belonged to the time of Ahaz.

3:16), when taken with the context, seems in itself quite sufficient to set at rest the question of the position (on Ophel) of the City of David, of the sepulchres of the kings and consequently of Zion, all which could not be mentioned after Siloah, if placed where modern tradition has located them." And Sayce, as early as 1884, wrote "the key to the whole position is the fact that the south-east hill, the so-called Ophel, represents Zion, the City of David . . . It is no longer possible to deny it." Thus we have pretty general agreement as to the correctness of the new view.

But, although the original Zion is thus located on the southern part of the eastern hill, and was equivalent, at first, to the City of David, it is agreed that later it came to have a much wider significance. The City of David, it is claimed, came to be applied to the whole of the eastern hill, but never to more than that, while Zion came to include, first the whole of the eastern hill and afterwards, poetically at least, the entire city of Jerusalem, for, probably as early as the time of Solomon, the western hill as well as the eastern was, at least, partly occupied.* Mount Zion, at first, and strictly speaking, was therefore simply that part of the eastern hill on which Zion, the stronghold of the Jebusites, afterward called the City of David, stood, but later, as is plainly shown by 1 Macc. 4:37f and 7:33, it came to mean the entire hill, on which the Temple stood. Likewise while Wilson claims that many passages, as Isa. 30:19 Jer. 26:18, show Zion to be only a part of Jerusalem, certainly there are many others which show the two terms to be interchangeable. Ps. 126:1 and 146:10. Such continued to be the meaning of Zion until after the apocryphal books were written, for there too Zion is identical with the Temple hill. But sometime after that date and before the visit of the Bordeaux pilgrim, in 333 A. D., the name was transferred, or narrowed we may say, to the western hill alone, and from that day on, through the centuries, almost to the present time, it has meant the same western hill. It was only during the latter years of the last century, that scholars began to contend that Zion was originally the name of the eastern hill, a claim now accepted by most of the archæological students of the world.

Another question which is of primary importance, in understanding the topography of Jerusalem, is the course of her ancient walls, and, although much labor and money have been spent in trying to solve that problem, there still remains much uncertainty as to the matter. The southern wall, it is true, has been definitely located. Bliss has actually traced what is thought to be Manasseh's wall from the Protestant cemetery, near Bishop Gobat's school, south of the south-west corner of the city, in an easterly direction, across the southern end of the western hill—the Jewish cemetery excepted—to a point almost due south of the Pool of Siloam; where a sharp angle

* Smith, however, is inclined to deny that the name Zion ever meant more than the original Jebusite citadel which he also says ought to be called "David's-Burgh" and not "City of David."

is formed. Thence he followed it, in a north-easterly direction, across the Tyropœon and up the edge of the Kedron valley, to a point on the southern end of Ophel, south-east of the Pool of Siloam, whence he believes it originally continued, including some of the portions of wall discovered by Guthe on the eastern side of the eastern hill, as well as the wall discovered by Warren.¹ If this is Manasseh's wall, of which there seems to be but little doubt, then the fact is established, that the Pool of Siloam was at that particular time at least, inside the city.²

But the northern walls, especially the second, are not by any means so definitely located. Indeed, there is still great difference of opinion on that question, because, on the location of that wall depends the further question as to whether the Church of the Holy Sepulchre can possibly mark the place of the Crucifixion. If the



"SKULL HILL," JERUSALEM

northern wall included the church, that, of course, makes it impossible for the church to mark the location of Calvary, while if it left the church outside the city, then it might, so far as this one point is concerned, have been the place. John 19:17. But, so far, that question remains entirely unsettled, and we shall be forced to wait for further light.

A kindred question is the location of Calvary. The traditional view, held by the Greeks, the Romanists, the Armenians, the Copts and the Syrians, places it in the Church of the Holy Sepulchre, and the ruins now to be seen inside the Russian Church, it is claimed substantiate that view, for it is thought by some scholars that those ruins are part of the second wall, which would of course place the church outside the city. The greater number of archæologists, how-

¹ This wall is 70 feet high, and was traced by Warren 776 feet toward the south from the southeast corner of the Haram.

² Conder contends, however, that this wall dates from the time of Eudocia, 450 A. D., and says that the discovery of any very ancient wall by Bliss is doubtful. Also, that Guthe's wall dates only from Byzantine or Crusading times.

ever, reject this site, some even going so far as to say there is not a particle of proof in its favor. But, although agreeing to reject the traditional view, they do not agree on any other location. Of the many places advocated by various writers, the so-called Gordon's Calvary has the greatest number of supporters. This skull-like knoll, with its eyeless sockets and darkly-shaded forehead, rising to a height of about 60 feet, lying outside the present northern wall, not far from the Damascus Gate, although it can not claim very strong evidence, still seems to fit the conditions most admirably. One can not but be impressed with the fact that this place commends itself as the identical spot where was uttered by our Lord, "That agonizing cry affrighted nature shook to hear," if he will only read the passages referring thereto, as he stands upon the hill itself, with the city in plain view to the south, with the Jericho road between the hill and the city, with the Damascus road on the west, with the road which ran north-west from Herod's Gate on the east, and still another road on the north. At any rate, this hill is clearly outside the city limits, for it is pretty generally agreed that the second wall was located about where the northern wall stands to-day. Beneath the present Damascus Gate, and a little above the ground, there appears the top of an ancient arch, which, in style, agrees with remains of a wall found near the Grand New Hotel and under Frere's College. These three fragments, it is said, are parts of the second wall.

One of the most interesting finds that has been unearthed in the vicinity of Jerusalem, is the Siloam inscription. * This is true, not only because of the unusual way in which it was discovered, but also because of that to which the inscription led. The story, which this stone narrates, is the digging of a tunnel, through the rock, from Gihon or the Virgin's Fountain to the Pool of Siloam. Explorations were immediately made and, sure enough, there was the tunnel, a rock-hewn aqueduct, cut through Ophel, doubtless the very channel made by Hezekiah, 2 Chron. 32:3f and 30, and 2 Kings 20:20.

Still another find, and perhaps of equal interest, is the warning stone, now to be seen in the museum at Constantinople. In the ancient Temple, the line that separated the court of the Gentiles from that part where only Jews could go, was marked by a low wall, upon which at intervals, according to Josephus, were to be seen stone slabs, on each of which had been inscribed the notice that no Gentile would be allowed to pass that line, under penalty of death. This particular stone has the inscription, "Let no Gentile enter inside of the barrier and the fence around the sanctuary. Any one trespassing will bring death upon himself, as a penalty." It was this injunction which Paul was accused of having violated, when the Jews from Asia stirred up a mob against him in the Temple. Acts 21:28.

While many other discoveries, of more or less importance, have been made in and around the Holy City, these that have been mentioned are the ones of chiefest interest. One thing that has been

* For translation see RECORDS OF THE PAST, vol. I, pp. 31-32, 1902.

sought for many years, but which so far has not been found, is the tomb of David. As is well known, the rock-cut aqueduct from Gihon to Siloam is a very tortuous affair. In 1887, Clermont-Ganneau suggested that one of its curves was probably made to avoid the vault which contained the tomb of David. Dr. Bliss, in an attempt to follow the suggestion, cleared a spot on Ophel, 44 ft. by 100 ft., to the natural rock, with the hope of finding this tomb for which the world of controversialists has been looking so long. Much to his disappointment, however, he was unsuccessful, though it must be admitted, that by some mistake he dug, not where the French scholar suggested, but on the other side of the channel. After the mistake was discovered, there was not time before the expiration of the firman, to make further search. It is now suggested that with a new firman and a few thousand francs, there is well-grounded hope that the tombs of David and Solomon may yet be found, with perhaps the Hebrew inscriptions which were likely engraved at the time of their burial. What a thrill that find would give to the world of religions and scholarly thought!

Leaving Jerusalem for other parts of Palestine, let us see what has been found at the different places where work has been done in the Shephelah. *

Before Bliss began at Jerusalem, Petrie in 1890, was sent by the Fund from Egypt to Palestine to search for the situation of Lachish, which he located at Tell el-Hesy. Although neither great buildings nor important inscriptions were found, he did find in the layer of debris a continuous history of this ancient city, for a period of about a thousand years, dating from the XVIII Egyptian dynasty, or about 1400 B. C. Here it was that he was able to demonstrate that the depth of the debris increased, at an average rate of about 5 ft. per century.

A little more than a year after Bliss closed his work at Jerusalem, he too, assisted by Mr. R. A. Stewart Macalister, began work in the Shephelah, under a new permit bearing the date of Oct. 1, 1898, and good for two years. Explorations were made under this firman at Tell Zakariya, Tell es-Safi, Tell ej-Judaida and Tell Sandahanna about 15 or 20 miles south-west of Jerusalem, and less than that distance north-east of Tell el-Hesy.

The first of these 3 tells is a hill 350 ft. high, and on the top about 400 ft. by 1000 ft. At the south-east corner of the hill were found the ruins of the ancient citadel, an irregularly shaped fortress 220 ft. on the west side and 120 ft. on the north, with 6 towers, one at each angle of the trapezium, and an extra one somewhat near the middle of each of the northern and western sides. This hill is thought, from the nature of the debris, and from its location to be Azekah, another of the strongholds built by Rehoboam, when he fortified his territory against Jeroboam and his followers in the north, 2 Chron. 11:9. It was later taken by Shishak, as we learn

* See RECORDS OF THE PAST, vol. IV, pp. 291-307. 1905.

from 2 Chron. 12:4 and also from Shishak's own record, inscribed on the outside of the southern wall of the great Temple of Ammon at Karnak.¹ The spade has turned up evidence of 4 separate occupations of this hill. It was founded in pre-Israelite times, and therefore was inhabited when Joshua came into Canaan. It was fortified during the Jewish period and was later occupied, for a short time, by the Romans. These facts themselves make a good return for the labor and money invested. Further than this, however, not much of importance was found. It is true that "many specimens and varieties of pottery and implements," made of "stone, bone, iron, bronze, glass, brick and clay" were found, as well as a number of pit-ovens, such as are in use to-day, and cisterns, serving "the double purpose of keeping a supply of fresh water and of storing corn safely underground," in one of which "grains of barley were actually found adhering to the sides," but no tablets and no writing of any sort except that on jar handles came to light. The most valuable of these was one on which were inscribed, inside a cartouche, two lines of Phœnician characters which Hilprecht reads "To the King, Hebron," that is, it was an offering to the king, and it was manufactured perhaps at Hebron.²

Work was next begun at Tell es-Safi, about 5 miles west of the first hill. From the fact that two grave-yards, a *wely* and a modern village are to be found on the hill, all of which are exempt from disturbance, the work of excavation was necessarily confined to small portions of the hill. Three upright monoliths however, were found, which it is thought were used as objects of veneration before the temple was built, remains of which were found near by. It is also worthy of remark that two pre-Israelite strata were found, one of them older than the oldest at Zakariya. It has, besides, a stratum of the Jewish period and one even as late as Crusading times. Its history therefore, was traced for a much longer period than that of Zakariya, for it began earlier and ran to a much later date. The city was as ancient as was Gath. It was where Gath is thought to have been. It was fortified at about the time when Gath was made a city of defence, and it probably was that celebrated old Philistine city Gath itself, a fact however, yet to be definitely established. The old walls were 12 ft. thick and in places are preserved to a height of 33 ft.

Further work was done during 1899 and 1900 at Tell ej-Judaida and at Tell Sandahanna. The work at the former was not prosecuted far enough to identify its name, but the latter is thought by Bliss to mark the location of Mareshah, Josh. 15:44.

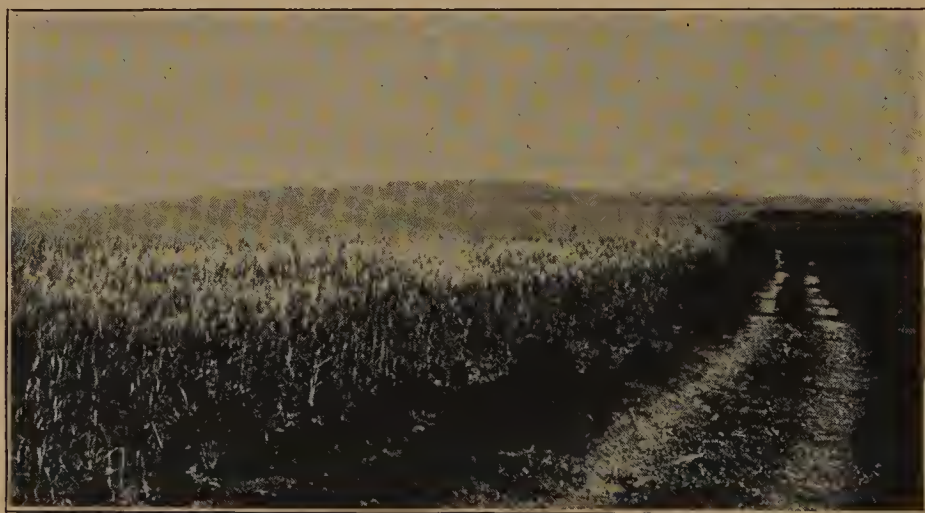
It may be said, however, that at Judaida the old city walls which were 10 ft. thick were traced, and were found to have 4 gate-ways

¹ It was also one of the places besieged by Nebuchadnezzar, Jer. 34:7.

² In all, 61 of these jar-handles with similar inscriptions were found at the 4 tells now under consideration. On each there is the same upper line "To the King." Twenty-five have no place named below, while the other 36 have 4 different names. Eight have Hebron, 6 have Zip, 15 have Shocoh and 7 have a name as yet unread. This, Bliss thinks, shows that these were manufactured at 4 different royal factories, in the 4 named towns, and that the designs between the two lines of each inscription are but different marks or seals of the various kings. They seem to belong to the period from 650 to 500 B. C.

and 24 towers projecting inward. "The 8 towers flanking the 4 gate-ways were probably all hollow, but the remaining 16 were mere buttresses of solid masonry." Of the 61 jar-handles found in all 4 of these tells, 37 were found here, 13 more than from the other three combined.

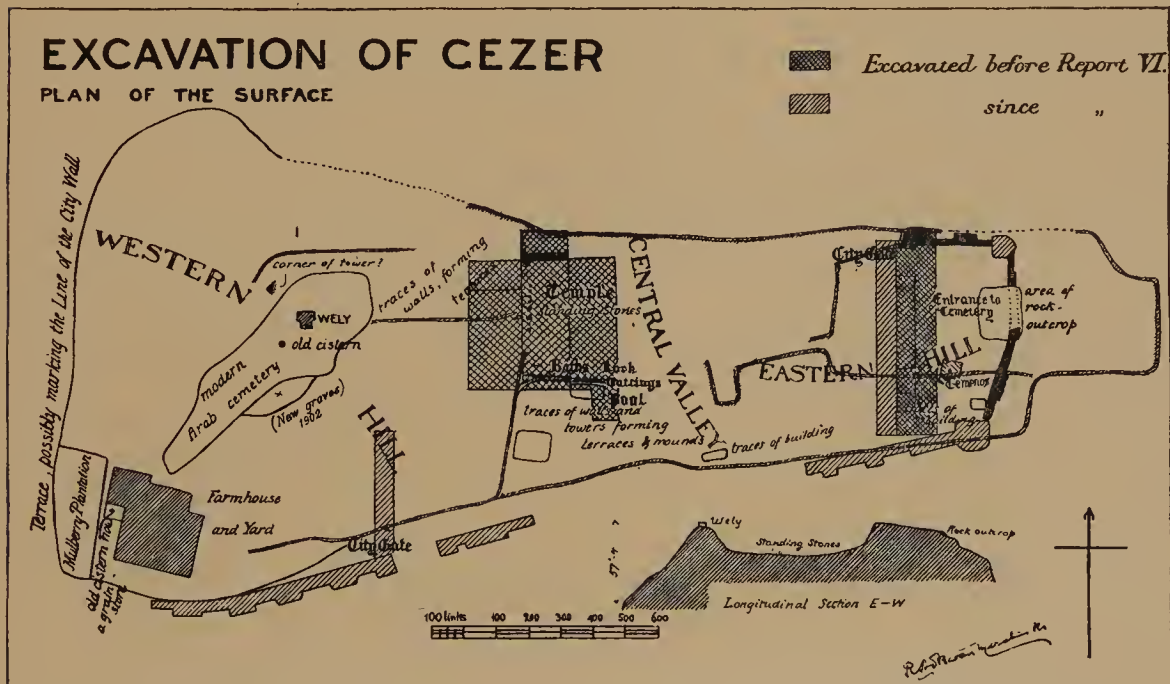
At Sandahanna two towns were discovered, one above the other. The older or lower dates from at least 800 B. C., and the upper is from the Seleucid period. Inside the wall and near the eastern gate of the city were found the remains of a large building, which Bliss thinks formed part of the fortification of the city, but which Hilprecht believes was "the house of judgment," where the judges use to "sit." Cf. 2 Sam. 15:2-5, etc. In proof of his view, he cites the 16 male and female lead figures found there, with hands or arms tied, and which probably represent prisoners. But more interesting is the fact that here, 50 inscribed tablets were found. While these may not possess much value in themselves, they may be an indication of what is yet to be unearthed, at other places in Palestine.



GENERAL VIEW OF GEZER

The place, however, which, of all that has been investigated outside of Jerusalem, has given the greatest results, is Gezer, where M. Clermont-Ganneau had already discovered the bi-lingual inscriptions, in Hebrew and Greek, which defined the limits of the city, and where work was begun June 14, 1902, and was pushed with vigor, under the personal direction of Macalister until August 14, 1905. This is the ancient city which, even in David's time, remained in the hands of the Philistines, 2 Sam. 5:25, although at an early date it was subject to Joshua. Finally, however, Pharaoh took Gezer and, having burnt it, gave it to his daughter, one of the wives of Solomon, whereupon Solomon rebuilt the city, 1 Kings 9:16f. From this time on, for many centuries, even down through the Maccabean period, and to the time of the Crusades, when Saladin conducted "futile negotiations with Richard Coeur-de-Lion," this has been a place of

great historic interest. Its importance, however, lies not in the fact that, as a city, it remained to so late a date, but rather in the opposite fact that it was already in existence long before the Israelite occupation of Palestine. Three of the letters, found in the celebrated correspondence unearthed at Tell el-Amarna, were written from Gezer itself, at this early date. That being true one naturally asks, why may we not reasonably expect to find at Gezer some of the letters sent from Egypt in reply? For these reasons, the work at Gezer has been pushed with the highest of hopes and the greatest of expectations and not without great reward. As Masterman has written "Where else do we know of a site, about which have surged the currents of civilization for 4 millenniums, associated with Amorites and pre-Amorites, with David and the Philistines, with Solomon and a Pharaoh, with Alexander and the Maccabees, with Saladin and



Coeur-de-Lion and, one may add, with Napoleon and Abraham Pasha, both of whom in modern times passed beneath its slopes?"

As a result so far, Mr. Macalister has found the remains of 8 different periods of occupation, dating from the times of the pre-Semitic cave-dwellers of the dim and misty past, to the days of the Maccabean and Christian periods. The two lowest of these 8 strata, were inhabited by an aboriginal non-Semitic race. Then came a Semitic people who lived there during the times of the third and fourth strata, whereas the fifth and sixth date from the time of the Israelites themselves. The fifth stratum is the one which contains the remains of the city which Pharaoh destroyed. To say nothing of the thousands of "jars, beads, flint-knives and arrow-heads, lamps, images," etc., it has been discovered that the inhabitants of the first occupation cremated their dead, the remains of more than one hun-

dred bodies having been found in one burial cave, and that those who followed "took part in a degrading worship of the reproductive power of nature" the symbols of which worship are great upright stones, still standing, and to be seen by all who visit this interesting spot. Great walls from 3 different periods, one of them at least, strengthened by mighty towers, have also been unearthed. One of these towers measures 24 by 31 ft. In one cistern the remains of 15 bodies were found. Fourteen of these were skeletons of men, of various ages, the other being the remains of a young girl. Her body had been sawed in two and the lower half was not to be found. What this means no one knows. It might have been a sacrifice or a cannibalistic feast or any one of many other things. Mr. Macalister thinks it probable that the 14 persons perished, perhaps as a result of some accident or other calamity, and that the girl was sacrificed as an extraordinary propitiation. The most important discovery is that of a great high place or temple of worship, belonging to the third stratum. Eight great stone pillars, ranging in height from 5 ft. 5 in. to 10 ft. 9 in., have been found, 7 of them being in a fairly regular gentle curve. Likewise a stone socket was found probably that in which the Asherah or wooden symbol stood. Such pillars and Asherim are frequently mentioned in the Old Testament. Cf. Deut. 12:3 and Ex. 14:13. Also near these pillars and under the floor of the temple area, were found "a number of jars, each one containing the skeleton remains of a newly born infant." It is supposed that this is but a trace of their custom of sacrificing the first-born child, a custom which the Amorites followed for a thousand years. A fragment of an Egyptian statue, with hieroglyphics inscribed on its base, has been discovered, and in the debris of the fifth stratum were found, "the bones of infants which were built under or into ordinary house walls." This seems to show that they sacrificed human beings, usually infants, in connection with certain foundation rites, as was also true in many other places. * And, even in the very latest reports of the Palestine Exploration Fund, Mr. Macalister has written of a number of new and important finds. Among these may be mentioned several scarabs, from the Hyksos period, and one large one of Amenophis III. A granary containing 600 baskets of charred corn—nearly a ton—was also found, and, in a tomb, a signet ring of bronze, on which was engraved the head of our Lord, dating, it is thought, from the early part of the IV. Century of the Christian Era. Another of the chief things found is a cuneiform tablet. It came from a late stratum, contemporaneous with the early Hebrew monarchy, and although the name of Gezer is not mentioned in the inscription, and although it is manifestly Assyrian, in several particulars, and although its presence at Gezer is unaccounted for, still it is of very great interest and importance, not perhaps for its own inherent worth, but for the promise which it gives that others may also be

* Remains of such sacrifices as well as other infant sacrifices have recently been found by Dr. Sellin at Taanach, and by Dr. Schumacher at Megiddo.

found. It is not known whether it was inscribed at Gezer, or at Nineveh, and, for some reason brought to Gezer. Sayce goes so far as to suggest that possibly it may be a fraud, palmed off by some astute workman on the ever alert director, a thing that would hardly seem possible to one who has seen Macalister at his work, on the spot, and knows something from his own lips, of the methods which he adopts to prevent just that sort of thing. At any rate, he certainly thinks it was found at Gezer, else the world would never have heard of it.

Johns may have struck the proper answer to the question, in his suggestion that this is an evidence that Assyria had a western fortification, at Gezer. And Pinches, after pointing out that the eponym mentioned is not the one for the actual year in which the tablet was inscribed but for the preceding year, says this seems to



TEMPLE AT GEZER BEFORE THE EXCAVATIONS WERE BEGUN

show that the tablet was not written in Nineveh else the correct name would have been given; and he adds that it is hard to understand this fact unless it was written in Gezer, so that on account of the great distance the news of the election had not yet reached the scribe. The tablet gives the contract by which an estate with houses and slaves, was transferred from one man to another. It also contains the names of several witnesses to the transaction. And now, since the above was written, a second and similar tablet has come to light. It has the name of one Hebrew witness and the name of a second witness is the same as one on the first tablet. It came from the same stratum as the first tablet which would seem to indicate that it is of the same general date. As a matter of fact its date proves to be 647 B. C., "only two years later than the former fragment." This, it is thought, settles the question as to the genuineness of the other tablet

for even Sayce writes "the discovery of the second broken tablet sets at rest all doubt as to the provenance of the first and encourages us to hope that more will be found." Both of these fragments are monuments which point to an Assyrian garrison at Gezer.

Still another interesting and late discovery is what is regarded by the excavator as a palace built by Simon the Maccabee. An account of the siege and conquest of the city by this man is graphically given in 1 Macc. 13. For many reasons, one of which is the finding of an imprecatory inscription calling down destruction upon Simon himself, this is thought to be the very palace occupied by this intrepid Maccabean leader. The castle is a mammoth affair and there is a large courtyard just inside the gateway. There are numbers of chambers, the use of which is only a conjecture at present, as some of them have no openings and as nothing has been found within them to point to their purpose. The most interesting part of this palace is



INTERMENTS IN THE SECOND BURIAL CAVE AT GEZER

a large pillared hall, which, Mr. Macalister thinks, shows how Samson destroyed the Philistines in the Temple of Dagon. The stone pillar bases, some of which were found, were the supports, he believes, of wooden posts which, in turn, bore up the beams of the roof. By pushing these posts from stones on which they rested the ruin of the temple would be easily accomplished.

And, even in the very last weeks of the work at Gezer, the most complicated system of caves yet found was unearthed. They were originally excavated by the pre-Semitic inhabitants of the hill, and were used by the later residents as a place of burial.

And last, but not least, two tombs, totally unlike any other heretofore seen and possibly pointing to Philistine influence, have recently come to light.

Many more pages might be written in giving simply a list of the interesting and sensational finds which have been unearthed at Gezer.



GEZER HIGH PLACE

But this is sufficient to picture, in lurid light, the awful sin of those early Canannitish Gezerites, and to show good reason for the frequent and strenuous denunciation by the prophets of Israel against their heathen worship, which was a constant temptation to the Lord's chosen people. It is true that no letter from the Egyptian king has yet been found, but all hope has not vanished, for further work is still to be done we trust, a new permit having been applied for to begin next summer. At the end of the original firman, which allowed work for two years, Macalister wrote, "On some subjects on which we had been hoping that it would offer testimony it has as yet remained silent, while in others it has given a fullness of information beyond what we have dreamed. It has now been proved that cuneiform tablets are to be found within it, though where they are, it is of course impossible to say till they actually come to light." With that feeling he entered upon the third year of his work, during which time he examined as much as possible of the $\frac{5}{6}$ of the tell which then remained untouched. What the future may bring forth no man can foresee. When we remember that life on this mound has been traced back almost to 4000 B. C. and that the records of neolithic man have now come to light we can understand something of the importance "of toil in tent and trench." We now realize fully for the first time what Israel had to contend against throughout all the centuries and

we have proof from an outside source that what the Bible says about the Canaanites and their religion is absolutely and historically correct, and when the results of the work already done are fully classified and compared we shall know more than ever before of the religion and the history and the culture of the peoples who occupied Palestine before Israel crossed the Jordan.

Such is but a glimpse of some things which have been accomplished as a result of researches in Palestine. To write in full upon the subject would require volumes—indeed many volumes have already been written for that very purpose.

But great as have been the results only a good beginning has been made of what ought to be done and of what, we believe, will soon be done. Many other places ought to be excavated and many other tells ought to be opened. Some of these will no doubt prove richer by far in their aid to Biblical scholars, than anything that has as yet been worked. Samaria, for instance, with the splendid remains of that great colonnade which was a part of the magnificence of the city in the days of Herod, offers it would seem, an especially fine opportunity for the spade of the excavator. A question of peculiar interest to the Christian world is the location of Capernaum. For many years Tell Hum was undisputedly pointed out to the traveler as the spot where "His own city" stood. But of late Khan Minyeh at the north-west corner of the lake, and in the edge of the plain of Gennesaret, has come forward as a rival claimant. While it is a fact that as yet no one can say which of the two places really marks the location of Capernaum, it must be admitted that the argument in favor of the latter seems, at the present time, to be more weighty. The settlement of the question, however, will probably be forced to await the final verdict of the spade.

Samaria and Capernaum are only two examples of the many places which ought to be exhumed. Tells are to be seen in various parts of the land, notably in the region of Esdraelon. Some of these have already been excavated, but others perhaps are holding their secrets securely, until modern science shall bring them to light for the benefit of the student world of to-day. Dr. Sellin has completed his work at Taanach where among other things 7 cuneiform tablets were found and at Megiddo, as at Gezer, they unearthed rows of stone pillars on some of which Hebrew letters had been inscribed.

The German Oriental Society is giving its attention to synagogues in Palestine and at the present time their work at Tell Hum is almost complete.

As the work goes on we are led to wonder what we might not find if only Jericho for instance and Jerusalem herself should be scientifically and fully explored.

Let us hope that men of means may see to it that funds are furnished for the further prosecution of this work, and that at the earliest possible moment the splendid work now being done by the University

of Chicago in the far-away East may be duplicated in the Holy Land itself. The Palestine Exploration Fund and other societies are worthy of all honor for what they have done and are doing to-day, but America ought not to be content to allow all the labor and all the honor to be accredited to other nations. Let America be aroused and do her part in this worthy and most wonderful work.

LLEWELLYN L. HENSON.

PROVIDENCE, R. I.



THE ARCHAEOLOGICAL MUSEUM OF FLORENCE, ITALY

FLORENCE is so full of the works of both classic and modern art, that the visitor is in danger of neglecting its archæological treasures. These, however, are of the greatest interest and value, and are preserved and attended to in a manner to arouse the envy of an American. When a citizen of Ohio with its numberless neglected objects of prehistoric archæology sees the interest taken by Italy in exploring her mounds and crumbling ruins, he can but long to create a kindred interest among his own fellow citizens. But the great State of Ohio is without a museum building and appropriates but the merest pittance in adding to and caring for what archæological treasures she has. On the other hand, in Italy the single province of Tuscany has filled to overflowing a large building with the prehistoric treasures exhumed from ruins that had been neglected until recently, and is constantly enlarging this collection, making it one of the most interesting places even in Florence, the richest center of art treasures.

It should be said, however, that no expense has been laid out on the exterior of the building. Everything has been expended on the display and care of the treasures themselves. More than a dozen rooms are filled with the collection; while outside a large garden is devoted to reconstructions of the burial places that have been exhumed. In this garden one is struck with the frequency with which mounds of earth are made to cover elaborate receptacles of stone prepared for the immediate interment of the dead. This accords with the habits of the prehistoric inhabitants, as we have observed in Denmark, Sweden, Russia and Siberia, as well as throughout the Mississippi valley in America; though in America the receptacles were very rude.

Among so many treasures we can select for notice only a few illustrating the early pervasiveness of Greek influence throughout almost the whole of the territory which came under the sway of Rome; and this before Rome had spread her conquests far.



VASO FRANCOIS [FIG. 11]

I. What is regarded as the "principal glory" of the museum is a sarcophagus found in Caroto Tarquina in 1870. * It is made of alabaster, and decorated in colors on the outside which have retained their freshness remarkably. The fresco represents a battle between the Amazons and the Greeks. While much of the color has faded, what remains is very life-like and is sufficient to give a vivid idea of the whole. The darker portions of the figures in the photograph are Pompeian red in the original. The date of this work is sometime in the IV Century B. C.

II. The second illustration represents one side of a fine terra cotta vase, about 3 ft. in height and 2½ ft. in diameter. This is known as the "Vaso Francois" from the name of the original owner. It

* See Frontispiece.

was found at Chinsi, and is supposed to date from the VI Century B. C. In 1900 it was thrown to the ground by an insane guardian and broken to pieces, but has been so carefully restored that it is almost impossible to detect marks of the accident. The first row of decorations exhibit the battle between Peleus and Meleager. The second is the funeral of Patroclus. The third is the procession of the gods Zeus, Hera, Poseidon and Amphitrite in a Quadriga, accompanied by the Muses and various lesser gods. The fourth is Achilles' first attack on Troy. The fifth a group of symbolical animals. The sixth is a battle of the Pigmies with Cranes. The handles and the other side are equally decorated in black.



BRONZE OBJECTS OF III AND IV CENTURIES B. C. [FIG. III]

III. The third illustration selected is a cluster of bronze statuary of the IV Century B. C., found in 1887, at Chianciano. The long staff running through the center ends in an eagle's head, and seems to have been a mace. The casting of the bronze is elegant. The human foot, hand and arm, and the horse's foot speak for themselves, even in a pictorial reproduction.

IV. The fourth illustration is a view of various bronze objects on one side of one room. These are various ages, from the III to the VI Century B. C. On the extreme left are numerous exquisite miniature figures of various sorts. Immediately to the right is a collection of bronze mirrors, upon some of which are beautiful figures. In the corner is the statue of an orator found near Trasimene Lake in 1520. This ranks very high as a work of art. It was dedicated by his son to Aulus Metellus. On the extreme right is a Chimera as he was wounded by Bellerophon. The casting is such as to throw great credit upon the skill of Etruscan artisans in the V Century B. C.

How much earlier than the VI Century B. C. the art of casting bronze was practiced in Etruria we do not know. But from the fact that exquisite bronze castings are found in Egypt, dating from about 3,500 B. C. or 3,000 years earlier than these from Italy, we need not look on the art as having arisen independently in Europe. It was probably borrowed, like so many other things, from Egypt. As the illustrations given in the article on Early Egyptian Art (See vol. IV pt. 12, Dec. 1905, 5 pp, 369-372) show the Etruscan artists made no real improvement in the work of their predecessors of the fourth millennium before Christ.

The prevalence of bronze work in Northern Italy has an import-



BRONZE STATUARY FROM CHIANCIANO [FIG. IV]

the Trans-Alpine region generally. Archæologists have often spoken of the "bronze age" as a gradual development from the stone age of man. But it is more likely that bronze was introduced north of the Alps by commercial intercourse, as we know iron to have been introduced among the American Indians by barter with the whites. It is by no means likely that so difficult an art as that of making bronze was discovered independently by the stone using tribes of Northern Europe. It is far more probable that its manufacture and use was discovered by those phenomenal geniuses who gave to the world arts before the building of the Pyramids. Indeed the mechanical ingenuity bearing on the date of the so-called bronze age in Denmark, and the antiquity of the human race remained practically stationary from the time

of the rise of civilization in Babylonia and Egypt, until the invention of the steam engine near the close of the XVIII Century. Old as the relics of Etruscan civilization seem, they really belong to late stages of the progress of the world in civilization and art:

GEORGE FREDERICK WRIGHT.

OBERLIN, O.



THE PALESTINE EXPLORATION FUND

THE death of Major-General Sir Charles W. Wilson has removed a man of great distinction in the field of Palestinian archæology who began his study of Jerusalem before the Palestine Exploration Fund was formed. He first went out at the bidding of the Lady Burdett-Coutts to examine the water supply of the city. That was in 1864 and, although he labored with Palmer at Sinai and was helpfully interested in all that went on in Palestinian research, yet he always kept his mind upon Jerusalem. At the time of his death he was preparing for the press a book on *Golgotha and the Holy Sepulchre*, and it will appear ere long. Kindly and modest in manner he was never given to controversy and was careful not to overstate anything.

The successor of Sir Charles Wilson as chairman of our Executive Committee is Colonel Sir Charles M. Watson, who also is especially interested in questions as to Jerusalem. He, too, is of the Royal Engineer Corps, and distinguished himself in Egypt, and was Royal Commissioner at the St. Louis Exposition. In the last *Quarterly* he had a brief paper on Jerusalem, taking the ground that Jebus, captured by David, was the western hill, and that the "City of David" was Ophel. This is a very difficult subject, most students of it assuming that the hill taken by David from the Jebusites and the place of his residence were one and the same, and certainly we have not heard the last word of the discussion.

In his leisure between the two furmans for work at Gezer, Mr. Macalister examined the Marissa tombs of which Dr. J. P. Peters and Prof. Thiersch have written so fully in the finely illustrated volume. *Painted Tombs of Marissa*. * One inscription has been newly deciphered and yields a better meaning than before. Mr. Macalister is remarkably successful in all his work and is never idle.

The *Quarterly* also has a comparison of the results so far at Gezer and Megiddo, showing that generalization begins to be safe. At this rate of accumulation of data we shall before long understand very fully the conditions of Palestine in the pre-Israelite period, but the search for inscribed tablets and stones will never cease. The two

* See RECORDS OF THE PAST, vol. IV, Part X, October, 1905.

Tablets found at Gezer have been reproduced and can be procured of the undersigned. He can always supply back numbers of the *Quarterly*, as well as the books, maps, casts, slides, etc. Please see the advertising pages which RECORDS OF THE PAST will carry permanently for the benefit of the students of archæology and of the Fund.

THEODORE F. WRIGHT,

Hon. General Secretary for the United States.

42 QUINCY ST., CAMBRIDGE, MASS.



EDITORIAL NOTES

WALRUS TUSKS FROM CALIFORNIA:—It is reported from Santa Cruz, California, that Southern Pacific engineers, while excavating for the new coast-line railroad, unearthed a large quantity of sea-walrus tusks and also the remains of a mastodon. If the report is correct we have here another example of the sudden destruction of a large number of animals by some cataclysm such as that which filled the cave at San Ciro in Sicily. Further information as to the elevation above the sea at which these remains were found and also more particulars as to the surrounding contour of the country will be of great interest.

STATE HISTORICAL SOCIETY OF NORTH DAKOTA:—During 1905 the State Historical Society of North Dakota has been reorganized and in the future will doubtless be able to keep the specimens of Mandan and Arikara origin within their own state, many specimens heretofore having gone to societies in neighboring states. As there are many Indian village sites both of Mandan and Arikara origin and some showing a mixture of these two, this society has a good field to work and we trust will have the support of the people of North Dakota as well as the neighboring states in protecting and preserving these prehistoric sites.

RUINS IN GUATEMALA:—What promises to be one of the most interesting discoveries in American Archæology is reported from Guatemala. According to the newspaper accounts, "Count Maurice de Peregny, a French archæologist, has discovered in the Peten district of Guatemala, evidences of what he claims to be an immense ancient city of the Mayas which will take months to properly investigate. He will return to this continent next year to complete his investigations." If this discovery proves to be as important as the first reports indicate, it is to be hoped that nothing will prevent a careful systematic excavation of the site, and that it may arouse such interest in the ruins of Central America that the Governments of these states may feel more inclined than in the past to coöperate with scientists from other parts of the world, in gathering the wealth of historical evidence now buried in their territories.

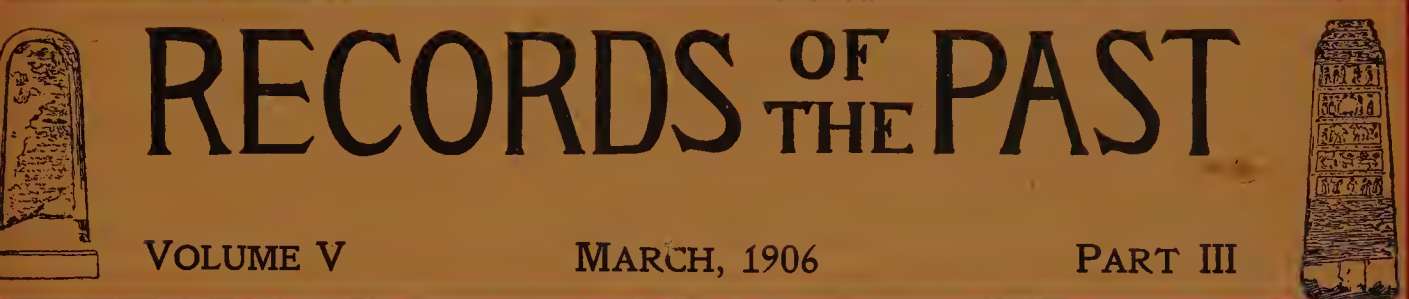


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VOLUME V

MARCH, 1906

PART III



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D. D., LL. D., Editor



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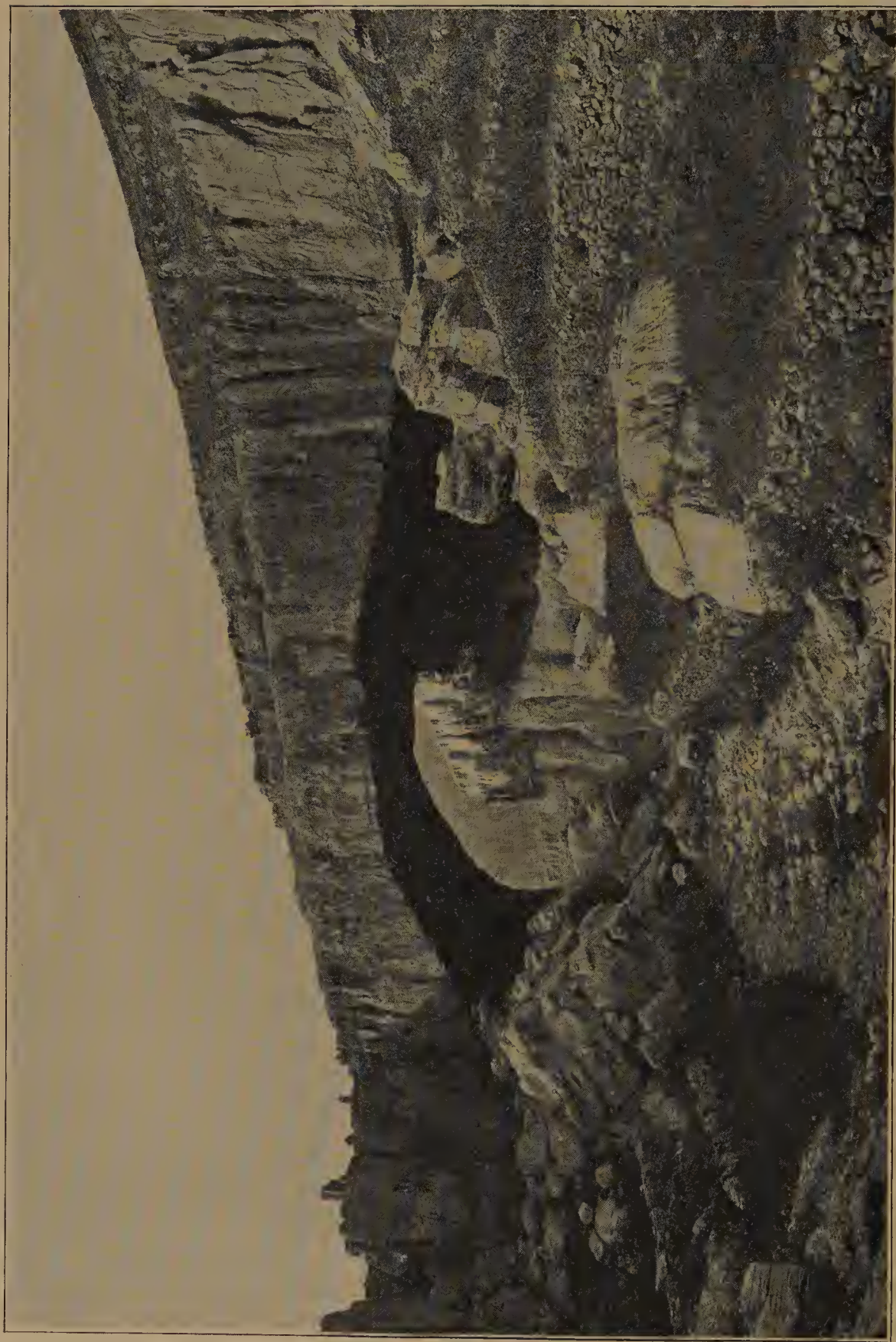
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NATURAL BRIDGE NEAR KAL'AT 'L FAKRA, LEBANON
Photograph by Dr. W. J. Van Dyck

RECORDS ^{OF} THE PAST

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AMONG THE SUN-TEMPLES OF COELE-SYRIA

A JOURNEY to the marvelous ruins of Baalbek is one of the tours which modern appliances are bringing down from the domain of the favored and enterprising explorer, and placing within the reach if not always within the appreciation, of the ordinary tourist. The railroad from Beirut to Damascus deposits the traveler at noon at the junction at Reyak, whence, after a comfortable meal in the station restaurant, another train on the new branch north throughout the length of the superb plain of the Bik'a or Valley of Coele-Syria to Hörus (Emesa) and Hama (Hamath), carries him in a couple of hours more to the Baalbek station. His quarters at the Grand New Hotel will be as comfortable as in the best at Beirut, at no greater expense, and the tourist who is simply "doing Syria" can walk over to the ruins, spend the rest of the afternoon and the following morning, there and in the afternoon board the train for Damascus. The vast courts, the prodigious sub-structures, the incredibly massive and sumptuous colonades will all be courteously shown by Mr. Michel A. Alouf, the polite curator left in charge by the German excavators, who have added so much to the beauty and interest of the ruins.

It is certainly not to be regretted that this wonder of the world has been brought within easy reach of the ordinary tourist, still less that German science and archæological enterprise backed by the

munificence of the Kaiser, have rescued much that was exposed to neglect and vandalism, and uncovered vastly more of wonderful beauty, revealing the symmetry of the whole design, and—equally marvelous with the prodigious grandeur of the mass—the exquisitely delicate perfection of the finish. Nevertheless there is something vulgarizing, that the archæologist and historian cannot but regret, in the arrival of the conventional tourist crowd, with its unavoidable, and in the Orient especially, repulsive accompaniments of blatant dragomans, multitudinous beggars and the attendant rabble clamorous for bakshish. The prodigy is there, to be stared at, wondered at, its blocks of stone nearly 70 ft. in length by 15 ft. in height and 15 ft. in thickness will provoke perennial amazement. Perhaps the splendor of design and the unrivaled richness of the sculpture, the granite columns from Egypt, the exquisite needle-point tracery in stone of interior decoration alternating with the magnificent reliefs of cornice and entablature, will excite to an equal pitch the æsthetic sense. But what significance will the spectacle have, as related to the period and to the geographical, religious and political conditions which produced this marvel? For Baalbek is not simply an isolated, unintelligible wonder. Dr. Hoskins of Beirut, joint author with Professor Libbey of Princeton, of *The Jordan Valley and Petra*, an archæologist whose capacity and opportunity for studying this question are unsurpassed, estimates that within a radius of 20 miles of Baalbek, on the slopes of Lebanon and Anti-Lebanon there are at least 15 ruined sun-temples, the grandeur and beauty of which would have made them famous but for the surpassing splendor of Baalbek.

However well it may be, then, to board the train at Beirut and stop over a day at Baalbek on the road to Damascus, the traveler who proceeds thus is deceived indeed if he imagines he sees what the older explorer saw, who went with horses, mules and tents, camping among the glorious mountain ravines, scaling the heights of Lebanon crowned here and there by splendid temples, kindling his fires beside the rivers that here gush full-born out of subterranean reservoirs deep under the mountain itself through their strange water-worn tunnels, or spreading his tent on the platform of some noble remnant of Greek architecture expressive of all the ardor of Syrian religious faith, under the unparalleled prosperity of Rome's iron rule.

The present writer will not soon forget the impressions of such camping tours up the glorious Alpine valley of the Nahr Ibrahim, the Adonis river of the ancients. We went a-foot exploring among its ruined temples and rock-cut altars from where the Aca is annually incarnadined with the mythic "blood of Adonis" issuing from the deep ravine, to where, 5,000 ft. above, the crystal waters rush from a huge cavern in the perpendicular face of the mountain and plunge in three successive cataracts into the clear deep pool beside which stand the ruins of the famous temple of Venus destroyed by Constantine. Tents and baggage went their own way to the appointed rendezvous, while the three travelers scrambled over hill and down



RUINED TEMPLE OF KAL 'AT 'L FAKRA

Photograph by G. S. Driver

dale. It would be hard to say which gave keenest pleasure, the glorious rainless air and splendid scenery as we pushed our way up the pathless slopes, leaped from rock to rock across the stream and rested under the pines; or the atmosphere of history, myth and romance from the Phœnician, Greek and Roman times, clinging to every ruin, every cutting in the rock, shadowing each grotto and cool recess with a veil of mystery; or yet again our encounters with the curious and superstitious, but kindly and hospitable natives.

A more extensive tour, in more luxurious style, on horse-back with two tents, cook and complete traveling outfit of camp bedsteads, chairs, table, china and the like was that enjoyed under the leadership of Prof. A. E. Day of the Syrian Protestant College, Beirut, in company with the veteran geologist and traveler Prof. G. Frederick Wright, of Oberlin, and Dr. George H. Driver, fellow of Yale Divinity School in attendance at the Palestine branch of the American Institute of Archæology, during the week October 26-November 2, 1905. This included a ride up the famous Dog river (Lycus) valley adorned at its mouth with the sculptured records of successive Egyptian, Assyrian, Roman and Arab conquerors, thence through the fantastic limestone pinnacles, the quaint native villages with their vineyards and mulberry plantations clothing the bare slopes; up the northern branch of the river to the famous Natural Bridge on the northwest flank of lofty Sannin, and so over the divide to the valley of the Adonis and the temple of Venus at Afka (Aphek, Jos. xiii, 4) already described.

The chief point of archæological interest in the Dog river valley is the group of mighty ruins crowning its very summit at the

point just above the running stream gushing from the great spring Neba'l Leban. Here the eye sweeps backward down the great valleys to where Beirut on its promontory is seen through the clear atmosphere 30 miles away and southward the miles of yellow sand along the shore.

Here at the so-called Kal 'at'l Fakra is a splendid sun-temple, its inner sanctuary measuring some 50 ft. by 100 ft., its walls built right across the limestone ridge, cut through for the purpose, so that its portal fronts the rising sun (E. 10° S)* and its court is walled by the living rock. A few hundred yards to the north be-



INSCRIPTION ON CORNER STONE OF THE TOWER

yond a clear running brook rises a massive tower whose corner stone bears a Greek inscription recording its creation in the year 355 (of the era of Antioch?) "from the funds of the greatest God." In the field a short distance away we found a plinth bearing the dedicatory inscription "To the Zeus of Heliopolis [Baalbek] from Hermes" which made it evident what divinity was worshipped here.

Ten minutes' ride over the ridge brought us to one of Nature's world-wonders, the vast arch of the Natural Bridge more symmetrical and of wider span than that of Virginia, but lacking at this season the beauty of running water and living green. Here, as where 3 weeks before I had camped on the platform of the Greek Temple at El Frat, where a pine-clad promontory juts out over the deep ravine of the Adonis, just where the view is most enchanting up and down the valley, and the rising sun gilds the summit of a bold high peak

* This orientation is universal among the sun-temples of Lebanon and Cœle-Syria though not always exact. It is explained by what Josephus writes regarding the orientation of the Tabernacle (Ant. iii, 6, 3), which of course applied equally to the temple fronting the Mount of Olives: "The tabernacle fronted the east, that when the sun rose it might send its first beams into it." The cella was of course lighted from the portal.



INSCRIPTION AT KAL'AT 'L FAKRA



PLATFORM OF GREEK TEMPLE AT EL FRAT
Photograph by B. W. Bacon



SOURCE OF THE ADONIS AND TEMPLE OF VENUS, AT AFKA

Photograph by B. W. Bacon

overhanging on the northeast, one could not doubt the æsthetic interest of the builders of these wondrous triumphs of architectural skill in the beauty of scenery about them.*

So we traveled from the Dog river valley across to the Adonis and Afka with its splendid scenery and ruins. But this time we could make no stop. Our equipage had been dispatched in advance and we must press on across another natural bridge at Akura to the high divide between the valley of the Adonis and (grandest of all in Lebanon) the valley of the Kadisha. This we ascended to where the noble grove of cedars, last remnant of "the glory of Lebanon" adorns its upper amphitheater, pitching our camp for a Sunday under "the Cedars which the Lord planted" (Ps. CIV, 16) whose solemn stillness and venerable majesty has impressed all hearts, pagan and Christian, in ancient and modern times, with a sense of religious awe.

Only the tourist vandal is impervious to reverence or shame. Here are perhaps 400 majestic trees in one group sole survivors in all this treeless region of the mighty forests whence the palaces and

* In spite of the Homeric descriptions of natural scenery the appreciation of the ancients for beauties of landscape is often doubted. The choice of sites for the temples of Lebanon would be almost a sufficient refutation in itself alone. On this point compare the observations of Curtis *Primitive Semitic Religions* p. 105. Also, *ibid.* on present-day sun-worship in Syria, especially among the Nusairiyeh.



RAVINE OF THE ADONIS FROM EL FRAT

Photograph by B. W. Bacon

temples of Assyria and Palestine, and the fleets of Phœnicia, obtained their choicest material. Scarcely one of the finer trees has escaped the hatchet of the transient camper and tourist, eager to "write himself down an ass." Some of the largest and finest trees have no less than a dozen "blazes" of from 6 inches to a foot square, or more, hewn in the living bark to record that "—— officer Russe" visited the place in "1901" and the like. The natives, out of their poverty, have surrounded the grove with a wall of substantial masonry with iron gates. A little stone chapel, with warden's house adjoining, attests their reverence for the still sacred grove, and a polite request to abstain from all injury to the trees—the desire of the proprietors to check the ravages which they are powerless altogether to prevent. Sins enough of vandalism are laid at the Syrian native's door, to most of which he is incited by the tourist's insatiable craving for "antikas;" but sometimes, as at the Cedars, the true incidence of the blame appears.

Monday's ride took us to the highest summits of Lebanon, more than 10,000 ft. above the sea, and still covered with patches of the preceding winter's snow, then after our eyes had feasted on the view across the great plain to Anti-Lebanon, with Hermon ending the mighty wall on the south, then back over the amphitheater of the

Cedars, and down the great gorge of the Kadisha to Tripoli and the sea, we picked our way, sometimes leading, sometimes riding our horses, down the Cœle-Syrian side toward Baalbek.

Before the plain is reached one enters a long parallel valley among the foot-hills, well watered by one of the great brooks which everywhere in Lebanon burst out from under the mountain's roots, full grown at birth. At its farther end toward the south lies the great basin, or Lake of Yammûneh, fed, not by the brooks already mentioned, whose waters were exhausted some miles back in irrigation, but by a new and far mightier stream, bursting out in a hundred great springs at the mountain's base, forming first a broad, crystal pool in the midst of which stands an island mound of perhaps an acre in extent, then, the streams all joining within a few hundred yards a river some 20 yards across and a foot or two in depth. This river flows first for about half a mile across the dry lake bottom, then disappears forever in some subterranean channel. In the rainy season there is a broad lake surrounded by the mountains, in the late autumn a broad dry basin the strange river rippling across its bottom at whose source stands the beautiful island permanently above the level of the lake surrounded even now by the streams and pools. Occupying the whole extent of this island are the majestic ruins of a great sun-temple, its lower platform of huge limestone blocks a rectangle some 300 ft. by 225 ft. in extent. Remnants of the great portal occupy the highest of 7 successive terraces, facing the exact point where the rising sun first becomes visible over the eastern ridge. Fragments of marble and sculptured limestone attest the beauty of the shrine, while the massive blocks that remain of the foundations and the steps ascending to the great altar seem to defy even the ravages of the quarrymen who are busily engaged in breaking up the choicer blocks for the village houses and cemetery.

A night beside the rippling stream and we were off again crossing the ridge which separates the Yammûneh valley from the Bik'a, dismounting again at the summit in front of a smaller ruined shrine, and vainly endeavoring to decipher the weather-worn Greek inscription on its altar base.

At Baalbek our paths diverged, the elder geologist and student going on to Damascus, after a visit to the ruins, the younger geologist returning to his work in Beirut, while the remaining member of the party lingered at Zahleh to inspect the typical ruins at Niha, an hour's ride north from Zahleh among the foothills of the eastern slope of Lebanon.

By the village of Niha, below, stands a temple whose massive blocks recall in outline and dimensions the prodigious structure of the Antonine emperors at Baalbek, though the temple itself is of small proportions. But the traveler can well afford to pass by this lower temple and the tumbled blocks in the stream bed below it, for the sake of what awaits him above. The horses scramble up the opposite side of the steep wady the ascent giving even more entrancing

views of the distant range of Anti-Lebanon, the broad, rich plain of Coele-Syria and the nearer flanks of the fertile ravine clothed with terraced vineyards. Then all at once, some 300 ft. above the village and lower temple the path reaches the outcropping ledge of a harder limestone which walls in the valley across its western end, except where a deep notch has been cut by the torrent in its precipitous face. No passage seems possible till suddenly there opens a rock-hewn passage cut clean through the ridge by Græco-Roman engineers, and one enters a great amphitheater of surrounding hills, on a spur of whose further slope, facing the east, stands the great temple of Kal'at Niha, or El Hosn, its subsidiary shrines, courts and altars in front, behind



PRONAOS, KAL 'AT NIHA

Photograph by G. C. Doolittle

it the ruins of dwellings and similar structures. Lonely and desolate it stands in the deserted valley, its grey limestone mass blending indistinguishably with the bare rock around, only the indescribably rich tints of the Syrian landscape veiling its desolation with strange beauty.

We wander beneath the huge portal, whose sides and lintel are formed of massive monoliths more than 15 ft. in length and 4 ft. to 6 ft. in breadth and thickness, an interior staircase hewn out of the solid mass of the blocks leading to the fallen roof. From the top of the wall we overlook the fallen columns and the capitals with their sculptured lotus flowers, the exquisite altar with shallow niches cut in each of its four sides, dedicated in a Latin inscription by those who



ROCK-CUTTING IN ROMAN ROAD TO KAL 'AT NIHA

Photograph by G. C. Doolittle

had assumed vows to the "avenging gods," the fragments of paneled ceiling adorned with sculptured busts, as at Baalbek, the prodigious fallen blocks of cornice and engaged pilasters, but beyond the eye sweeps across the inner valley, to where the torrent has cut its V-shaped notch through the cliff, and so out across the vast plain below to the purple range of Anti-Lebanon in the distance. Again we are fronting the rising sun, gazing on a scene such as few spots on earth can rival speaking even in its desolation to every human heart in irrepressible tones of the beauty and glory of nature.

These are but examples of the sun temples of Lebanon, scattered from Hermon on the south, adorned all round its flanks with similar rich shrines, to where among the northern foothills the Nusairîyeh still practice their worship of the sun in strange pagan rites. Detailed description would only repeat what earlier travelers have given more exactly,—Robinson the pioneer of modern Palestinian research, and Warren the angel of the measuring reed. For description of the temples of Lebanon in their surroundings the reader must be referred to Robinson's *Biblical Researches*. Details of measurements and architectural features are given by Warren in the article *Temples of Cæle-Syria* *P. E. F. Quarterly* for 1870, p. 184. Renan's *Mission en Phenicie* gives exact plans and drawings of nearly all which adorn the western slope of Lebanon.

Our present endeavor is rather to look at the phenomenon of this prodigious expression of religious ardor as a whole and recognize, so far as we may, its historical significance.

Why should this seemingly remote and to all outward appearance, bleak and sterile province of Syria, a mere ridge of bald limestone rock divided by one long valley and broken by steep ravines, only a ruined wall of Nature between sea and desert, be more richly endowed by Roman emperors than Rome itself with temples of surpassing grandeur and opulence? Why should those of Greece herself be made to seem poor and Egypt's colossal masonry no longer unique in comparison? One striking fact becomes obvious upon the most superficial comparison, and is confirmed by the inscriptions wherever deciphered. These magnificent structures from Baalbek itself, down to its smallest satellite, all belong to one period, beginning with the Flavian emperors, the period of Rome's great struggle with



SOUTH SIDE OF TEMPLE AT KAL'AT NIHA

Photograph by G. C. Doolittle

the new religion, born in Syria, defying already the demands of Rome's one established cult, the worship of the genius of Cæsar, and destined soon to usurp the throne of the emperors. It ends even more abruptly with violent destruction. The ruined temple at Afka bears silent and pathetic witness to the truth of Eusebius' report concerning its fate. Robinson had already remarked how its walls thrown violently outward as if by concerted effort from within, its granite columns transported across the sea and up these 5,000 ft. of rugged mountain roads, to be tumbled ignominiously down the slope, confirm the words of eulogy with which the Christian Bishop of Cæsarea commends the emperor's zeal in eradicating by this violence the sensual superstitions practiced at the place. Even more eloquent,

though without confirmation of historical record, are the fire-scorched walls of Kal 'at'l Fakra. Here, where the traveler brings with him from Beirut fuel to cook a meal and every splinter of wood is precious, the whole interior of the sanctuary has been ravaged by fire so intense as to scale off the inner surface of the stone, cracking the huge blocks, and changing the blue or greenish yellow of the limestone to brick-red. Such a conflagration was not accidental. In a country where doors and household implements, to say nothing of walls and interior finishings, are made of sculptured stone, accidental fires are almost unknown, or, if they occur, their ravages are speedily repaired. But here the destruction was complete and there is not an effort at repair. As the dedicatory inscription links el Fakra with Baalbek in its worship, so the proofs of its violent fate link it with Afka and the many unnamed temples which Constantine, according to our historian, doomed to the same destruction, or Justinian delivered over to Christian hands to be "transformed into churches, or, if not, destroyed."

Three centuries at the utmost is the period which witnessed this amazing development of religious architecture in Syria, the same 3 centuries which witnessed the birth and development into a faith dominant over the civilized world of the greatest of the 3 world religions Syria has cradled. Not that older temples of Phœnician or even Hittite origin did not previously occupy these sites. The ruined temple of Eshmun at Sidon erected (or rebuilt?) by Abd-Astart in the IV Century B. C. stands, an unaltered, uncorrupted witness of Phœnician temple architecture. Herod's temple at Jerusalem may even have served as model for some of the features of the great inner and outer courts at Baalbek. But as they stand freed from the smaller churches of the Byzantine period erected within, upon and out of their ruins, and from the still meaner structures of Arab fortification in the period of the Crusades or later, these prodigies of wealth, architectural skill and glyptic art are Roman, of the period from Trajan to Constantine. What then is their significance for the history of the world?

Perhaps the strongest impression made upon the practical-minded traveler is the enormous wealth attested by such prodigious public work in a land that to the eye, especially after the disappearance of the ephemeral green of spring, presents nothing but a boundless expanse of bare rock and stony slopes. The Arab word for the upper mountain slopes signifies "scraped" and as one coasts along observantly from Tripoli to Beirut, Haifa and Jaffa, the whole appearance of the coast, save for the dwellings and roads, so much more frequent than on the desolate shores of Greece, is bare and barren in the extreme. The boundary stone of Hadrian recently found near Zahleh, not far from the Temple of Niha, gives the "*definitis silvarum*" or boundary of the forest-reserve of that wise emperor, and so attests the attention of the Roman authorities, at the beginning

of that prosperous period of which we speak, to the vital necessity of sylvi-culture. Doubtless the Cedars of Lebanon were not then reduced to the two patches of a half dozen acres in extent which now survive. Pine groves richer than the natural woods of the Nahr Ibrahim or the recently planted slopes and barriers near Beirut, would then have been far more frequent and extensive than now. Instead of the few stunted bushes of oak, gnawed by the goats, and consigned to the eager charcoal burner's pit as soon as they have reached the thickness of a man's arm, there would have been, at least here and there, real forests, such as clothe the hillsides of Gilead, and retain through the 8 months of rainless summer something of the moisture of the winter rain. As it now is, the whole country resembles a huge carcass not only indeed skinned, but "scraped," till all the bones appear



TEMPLE OF ESHMUN AT SIDON

Photograph by G. C. Driver

bare and bleached. From the two central ridges the lateral branches extend east and west like ribs of some great skeleton, hiding only deep in their interstices a little moisture and life. But wherever water can be obtained the disintegrated limestone shows marvelous fertility. The very absence of rain to dissolve and wash away the fertilizing products of its disintegration during the period of vegetation makes the soil the richer; so that irrigation procures from what seems the merest stone heap prodigious crops of wheat. The deep valleys and the broad plain, abundantly watered by irrigation would furnish under any but the worst of governments an extraordinary abundance, the long rainless summer affording to the peasant just the necessary period for storing, threshing and winnowing the grain for which he has neither storechamber nor barn. But cultivation is by no means confined to the irrigated land. Up to the very summit

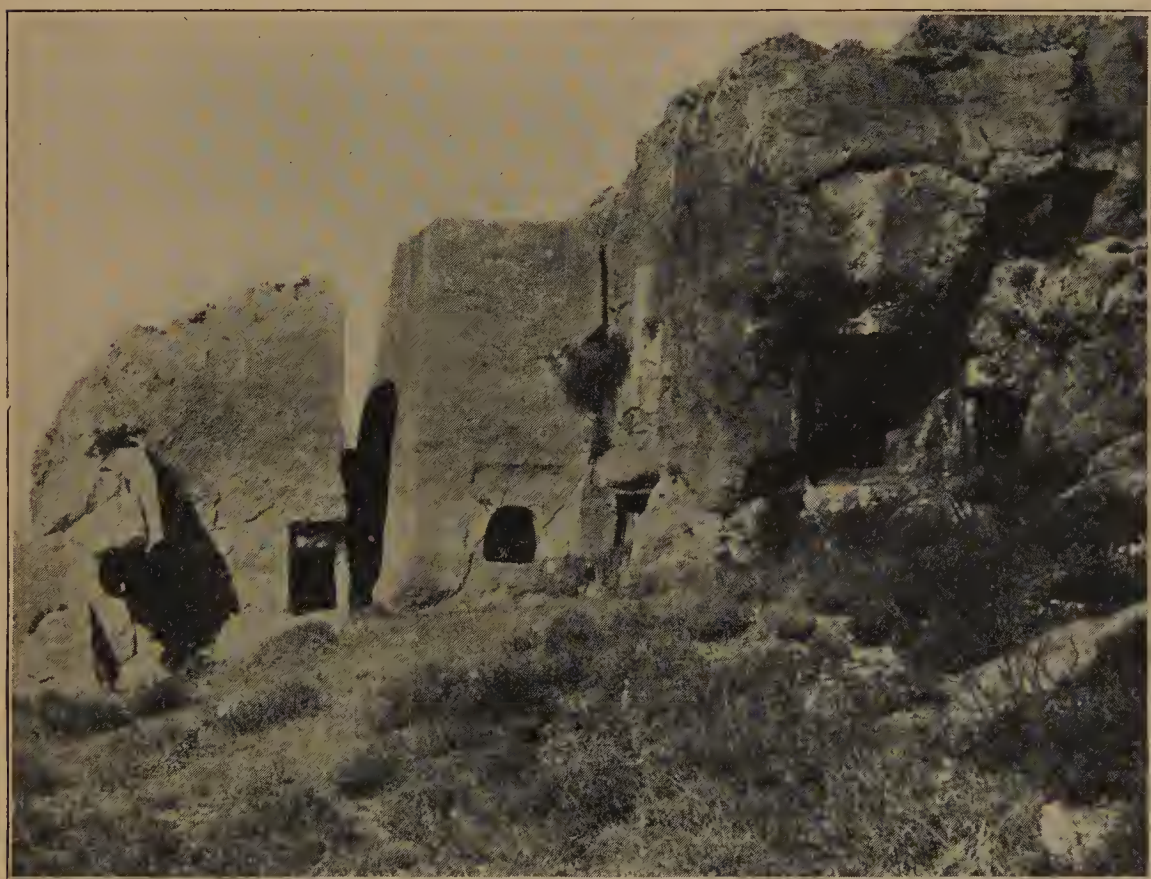
in many cases, up to the "scraped" cliffs in nearly all, the soil is industriously terraced and planted with vines and mulberry trees. Two crops of mulberry leaves a year are gathered, the first as food for silk-worms, the second as fodder for the sheep, the leaves of the mulberry actually taking the place of the grass of northern climes. And then the vine, the generous, noble vine,—no drop of water is vouchsafed it, save that it drinks from heaven; and yet it flourishes in rich, luxurious green far up the rocky slopes and over the very tops of the mountains, throughout the long drought while all else is bare and brown; and at the end it pours out its fruit in gigantic clusters unparalleled elsewhere. It is not for wine that vineyards are cultivated in Syria. The native makes no use of it and does not care for it. If he drinks it is *arak*, not wine, that tempts his palate. But after the ripening of the fruit in September and October there is still time before the rains for the drying of grapes and figs, and these with olives and bread, goats milk and flesh and the products of the flock, suffice. Do we wonder that the symbols of Ceres and Dionysus the sheaf and the clustered vine, should form the subject of sculpture in the exquisite carving in the smaller temple at Baalbek?

The forests of Lebanon, such as they were, are gone. But long before their disappearance the native had learned from Nature herself how to imitate and thus dispense with their chief function, retention of the moisture, and to make of the mountains themselves reservoirs of snow and rain. The rock-cut cistern and aqueduct—these are the secret of vegetable and animal life throughout Syria in ancient and modern times. Nature herself has led the way by her vast reservoirs hollowed out under the upper peaks in huge caverns where the melting snows flow down and accumulate to discharge through strange unexplored tunnels burrowed for miles by the dissolving action of the water on the limestone rock, until they issue all at once in great rivers from caverns in the mountain side as at Afka and Baniyas (Cæsarea Philippi at the foot of Hermon) or streams like the famous Ras el Ain at Baalbek. One may almost say in general in this topsy-turvy land that the river is largest at the source.

It follows that a country which at first sight seems to offer nothing but bare sunburnt rock, and water, destructive in the period of torrent and flood, fleeting and lost in the period of drought, offers, where its secret has been learned, resources at first undreamed of. When the Roman legions under Hadrian gave security at last against the one unconquerable enemy, the robber hordes of the desert, the secret had been learned for untold centuries. Mesha of Moab and Hezekiah of Judah with their rock-hewn aqueducts tunneled through the mountains did only on the small scale what Phœnician engineers had been doing for centuries before on the large, and what both owed in common to the guidance of Nature herself. From the flint chipping cave dwellers of prehistoric time along all this shore to the troglodyte architecture of Petra and the rock-cut

city of Edrei, the rock-hewn dwellings and tombs of Palestine and Phœnicia and the vast monolithic architecture of Baalbek borrowing the massive grandeur of Egypt and the sumptuous beauty of Greece, the transition is regular, a development proscribed by the conditions of the country itself. Fire above, water beneath; and on the bare rock between the unconquerable seed of life—such is the history of Syria through the ages.

But Roman control did more than provide walls of stone against the robber hordes of the desert and furnish the splendid arteries of communication that still remain between all parts making it possible to transport the granite columns of Egypt to adorn the streets of



PHŒNICIAN ROCK-CUT TOMBS NEAR SARAPTA

Photograph by B. W. Bacon

Damascus and Palmyra. The *pax Romana*, profoundly appreciated even by Christian fathers who protest against imperial proscription and persecution, spread wealth and settled agricultural prosperity like a wave over the whole Syrian Province. It had been waiting all these centuries for quiet and just government under which to display the worth of the secret wrested from Nature during the long past. Now it blossomed with unheard of prosperity from Antioch to Philadelphia of Ammon, and from Palmyra to the Sea. But Rome, if she carried good government to the East, took from it, as her own poets complain, her religion and her mythology. The Nile and the Orontes emptied into the Tiber. In the East, accordingly, was the real bat-

the ground between Christianity and Paganism. Both went back to their cradle for the decisive combat.

Few can appreciate in modern times how intense and sincere was the reaction and revival of Pagan religion under the beneficent rule of the Antonines, as Papal religion reacted in the XVII Century to check the spread of the Protestant Reformation. Such philosophic emperors as Hadrian, Marcus Aurelius and Julian, the so-called Apostate, were the severest persecutors. And their measures, repressive and otherwise, were not taken in the interest of politics only, but of religion as they understood it, and of philosophy as well. Philosophers and sociologists like Hadrian and Aurelius did not deal with religion in its surface manifestations, its mythological tales, its popu-



ALTAR AT KAL'AT NIHA

Photograph by G. C. Doolittle

lar legends and superstitions. They made at least the attempt to go down to its roots and real principles. In Syria where so many of the Greek myths, Perseus and Adromeda, Aphrodite and Adonis, Hercules and his labors, had their roots and scene, in Phœnician, the traditional source of letters, the home of nature myths, religion elemental forces of Nature, sun and rain and subterranean stream, seemed in nearer contact with the life of man. Here at all events, as in all ages, the religious feeling seems dominant in the human soul. Religion is and always has been the chief product of the country,

the origin of all its claims to greatness, the source of all its woes. Doubtless in the period when Christianity went forth hence on its white horse "conquering and to conquer" it did not exhaust the religious capacity of the Syrian people. Emperors who found a symbolism of real truth in the thinly disguised Nature worship of the Lebanon Mountains might well lend all the encouragement in their power to native enthusiasm, seeking only to clothe in more philosophic form for themselves and the more enlightened, the rude mythology whose hoary antiquity was no secret to them.

In these two respects the cluster of extraordinary temple ruins whose center is the great temple of Heliopolis or Baalbek, begun by Antoninus Pius, completed by Philip the Arabian priest of Emesa (Hörus) leave deep impress on the thoughtful traveler. The ruins of Philadelphia, Gerasa, Palmyra, the roads and aqueducts which intersect all the country far beyond present limits of cultivation, testify to the amazing outburst of prosperity and wealth that awaited there, and still await the strong hand of firm and just government. The ruined temples with their prodigality of beauty and skill attest the power of religious feeling misdirected but sincere, which springs instinctively from the hearts of this people. Throughout the struggle of Empire and Church it bloomed with all the ardor of expiring paganism and in the struggle perished. On its ruins stand the meaner structures of its antagonist, itself in turn corrupted and overthrown, and ruin and desolation lie waiting till a juster government and purer faith once more make the wilderness to rejoice and blossom as the rose.

BENJAMIN W. BACON.

JERUSALEM, SYRIA, December 20, 1905.



THE EOLITHIC PROBLEM

TO THE September number of the *American Anthropologist*, Mr. George Grant MacCurdy, Curator of the Yale University Museum, has contributed a noteworthy study of the latest and most contested question bearing upon the subject of the antiquity of man. It is entitled *The Eolithic Problem—Evidences of a Rude Industry Antedating the Paleolithic*. To the accepted divisions of the Age of Stone into the Paleolithic and the Neolithic periods as recently as 1892, Mr. J. Allen Brown, of the English Geological Society, proposed that there be added another division made up of numerous "roughly hewn flakes and nodules and naturally broken stones showing work, with thick ochrous patina, found on the plateaux of chalk and other districts, in beds unconnected with the present valley drainage." To these he suggested that there be given the name of "Eoliths" to indicate their position at the dawn of the Age

of Stone, and this term has been generally adopted for such rude objects by those archæologists who believe in their human origin.

There is no *a priori* improbability in holding that the earliest implements made and used by man must have been something vastly ruder and simpler than the well-known Chellean Paleolithic implement. Indeed that was the position maintained by the present writer so long ago as 1882, in a paper read before the Boston Society of Natural History, illustrated by numerous specimens found by him in some 9 or 10 widely separated localities in New England.*

The difficulty lay in persuading archæologists that such rude objects really exhibited unmistakable evidences of human workmanship. The same has been the fate of the so-called Eolithic implements found in Western Europe. It would take too much space to attempt to relate the history of such discoveries there. To accept them as genuine required of geologists that they should thrust back the appearance of Man upon this globe into the *Tertiary Period*; and this they could not do unless the proof was absolutely convincing. Consequently the *Tertiary Man* has had to face a skeptical world. But his believers are growing more numerous every year, and the archæological journals of England, France and Germany at the present moment are filled with discussions of both sides of *The Eolithic Problem*.

Mr. MacCurdy's paper is one of the most thorough and satisfactory of any that have appeared. The science of prehistoric archæology is one not to be learned out of books; it requires of the student extended travel, and the actual inspection and handling of thousands of specimens. This Mr. MacCurdy was able to accomplish in connection with his attendance at the Archæological and Historical Congress held at Dinant in Belgium, in August, 1903. He first visited some of the English localities, principally in the Chalk Plateau of Kent, and also studied the collection of Eoliths in the British Museum, as well as some in private hands. Crossing to Belgium he spent 11 days with Dr. A. Rutot of the Royal Museum of Natural History in Brussels, dividing his time equally between studying Rutot's collection, numbering thousands of specimens, and work in the field. Rutot is unquestionably the leading exponent of the new views of Man's antiquity; his studies have extended over a period of more than 20 years, and his publications have been very numerous. Together they visited several localities that had furnished Rutot the most convincing proofs of his theories, and of several of these Mr. MacCurdy gives carefully drawn sections, some made in the field, others taken from books. His discussion of the geological position of the *strata* is very convincing, and if the objects themselves can be accepted as of human origin, the Eolithic problem must be regarded as settled. If this is the case, the conclusions drawn by Rutot are

* *Some Indications of an Early Race of Men in New England*. Proceedings of the Boston Society of Natural History, February 1, 1882.

indeed startling, and Man's antiquity is carried back to a past of almost inconceivable extent during a large part of which he appears to have made no progress so far as his implements show, and for a very long period had not attained to the knowledge of fire. But can these objects be accepted as the work of Man? To speak frankly, so far as the figures given by Mr. MacCurdy are concerned, we must pronounce against them. But this does not prove that they are not real; it is necessary to see the objects themselves before forming an opinion. It must be acknowledged, however, that many specialists of the highest distinction have pronounced against them, on the ground that they could have been produced by purely natural causes, such as the action of torrents or of waves, "soil-creep" or others.

Quite recently new light has been shed upon the subject by the alleged discovery that similar objects are produced by the operations of a machine intended to separate the flint nodules from the chalk, in which they are contained, during the process of the manufacture of cement. A sort of artificial whirlpool is set up by the introduction of water into the machine, by which the flint nodules are subjected to every kind of shock and pressure with the result of producing all the so-called Eolithic forms. This has been set forth very clearly in an article by the distinguished French Geologist Marcellin Boule.* I suppose Mr. MacCurdy's article must have been written before his attention had been directed to these important results, as he makes no allusion to them, but they have been made the subject of numerous articles for and against, in the latest numbers of *Man*, the organ of the Archæological Institute of Great Britain and Ireland.

To Rutot's system of pre-historic classification Mr. MacCurdy has added certain finds in England, which he has synchronized with it, and he has appended to his article by far the most comprehensive bibliography that has ever been made of the subject. We advise all interested in the question of the antiquity of Man to read this most able presentation of the present *status* of the question. But Mr. MacCurdy admits that his opinion is based upon personal experience, as the only convincing kind of verification and he hopes the result of his paper may be to incite American archæologists to investigate the problem for themselves.

HENRY W. HAYNES.

BOSTON, MASS.



MAGNIFICENT TOMB OF A KING:—It is reported that the tomb of a king of the II Dynasty has been brought to light by excavations under the direction of the Service des Antiquités at Zâwat-el-Aryan, near Abusir. The mummy of Siptah Mineptah is also reported to have been found by Mr. Ayrton.

* *L'origine des eolithes. L' Anthropologie*, Tom. XVI. July, 1905.

EXCAVATIONS IN ASHUR*

BUILDINGS

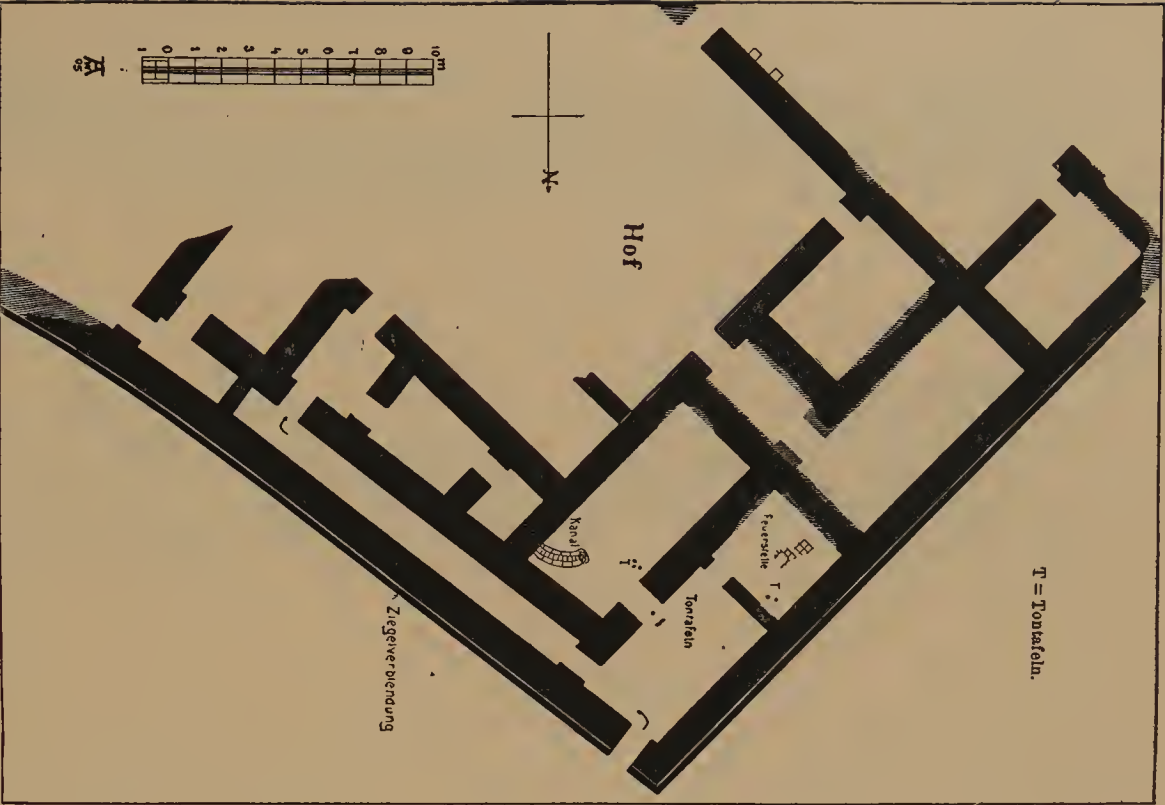
IN excavating the buildings along the southern edge of the eastern plateau at Ashur, a method of constructing the foundations of a building, hitherto unobserved, was discovered. The plateau had been covered with a thick layer of debris, and in order to make a solid foundation, walls of brick were sunk down to the rock bottom. (In other cases the area on which a building was to be erected was simply levelled off, and the foundations laid.) On these brick (clay brick) walls a layer of stones was laid, and on these the visible walls of the building.

The foundations of the building here excavated, show that it was built after the plan of the old Babylonian house, known to us from the excavations at Fara. The house was rectangular, 19 by 26 ½ meters, the shorter sides running north and south. The rooms are grouped around a rectangular court. On the south side are two narrow corridors, running east and west which, contrary to the general rule, can be traced in the foundations. As a rule we cannot tell where the entrance to a building was, but here no doubt it was at the southwest end of the outer corridor. (See plan.) One had therefore to pass through this corridor, turn the corner twice before he could get into the court. In other words, this was a precaution for times of danger, and we still find similar necessary precaution in modern oriental houses, as in Bagdad and Damascus. In the plan of the house excavated at Fara, (see plan) one sees the same idea carried out. These foundations without any breaks in them for doors, are also found in the old Babylonian ruins of Telloh and Nippur. In Assyrian times they were used when a building could not be built on solid bottom, but had to be erected where there was a thick layer of debris. Here walls without any breaks had to be sunk deep down through the debris. In late Assyrian times,—Sargon, Sennacherib,—it was customary to level off the ground and build on a heavy clay-brick foundation. On top of the terrace were constructed the regular foundations of the buildings.

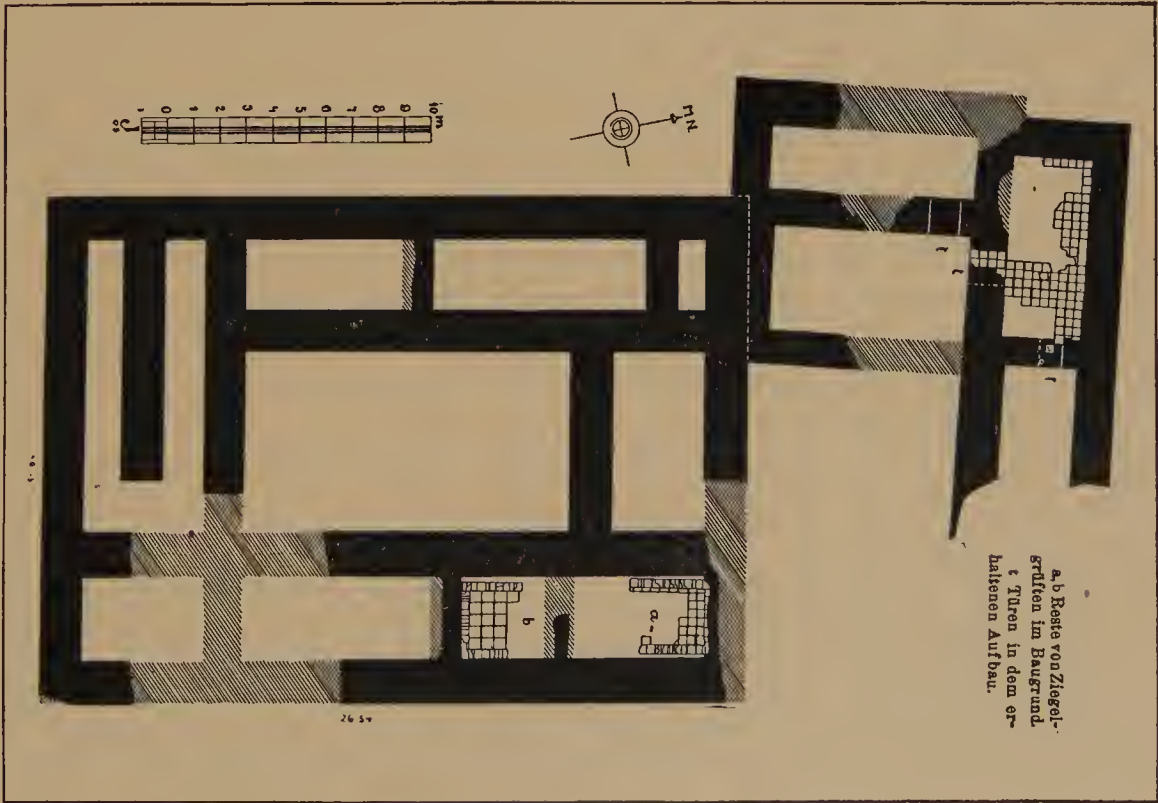
In the debris in which the clay-brick foundation of our building lay were found graves of the capsule variety. The gifts for the dead found with these were archaic vessels, glass beads, and perforated mussel-shells in large quantities. Together with these were found anklets and finger rings.

The history of the part of the hill on which our building stood, was as follows: On the bare flint rock there were settlements in pre-historic times. The remains of these are a few traces of fireplaces, and pieces of clay vessels with black and red geometrical designs.

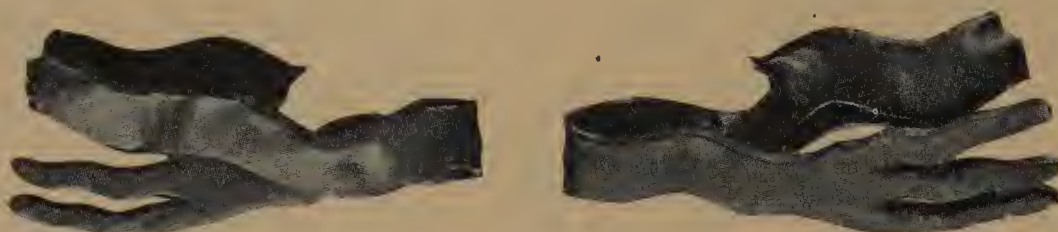
* Translated and condensed by Mr. D. D. Luckenbill from the reports of the German Oriental Society for RECORDS OF THE PAST. See also RECORDS OF THE PAST Vol. V, Part I, Jan., 1906.



GROUND PLAN OF A HOUSE IN FARA
 Tonsteine=clay bricks Hof=court, Feuerstelle=fire place, Ziegelverblendung=tile.



GROUND PLAN OF A HOUSE IN ASHUR
 a, b. Remains of tile vaults in the foundation. c, doors in the building.



GOLD REPRESENTATION OF THE LIGHTNING OF THE GOD ADAD

Then came the period in which dwellings were constructed out of hewn stone. In the ruins of these we find the capsule-graves. These buildings were destroyed, and a deep layer of debris collected over them. Through this layer the clay-brick walls of our building were sunk. Over the ruins of this building, was erected a smaller, but still Assyrian, building. Of this latter the entrance-room and bath-room have remained. The latter has the characteristic niche and the asphalt, trough-shaped (for drainage) floor. Over the ruins of all these buildings, lay part of a large Parthian palace, which covered the whole Northeast Plateau, including the ruins of the Ziggurrat.

GOLD COINS

Fifteen well preserved gold coins of the Roman Emperors of the II Century were found. They are all of different impression and may have been a collection.

A few read:

OB. IMPCAESPHELVPERTIN. AVG.
RE. LAETITIATEMPOR. COSII.

OB. ANTONINVS AVGVSTVS.
RE. RECTOR ORBIS.

A GRAVE

In a grave was found a well preserved female skeleton. The bones of former burials were heaped up in a pile to the right of the head. The body lay on the left side, stretched at full length, which is very unusual. A pair of silver ear-rings were found, also a pair of silver snake-shaped rings, used, no doubt, to bind up the long characteristic feminine locks, which hung over the ears. A pearl necklace was found around the neck and a string of larger pearls about the arm.

A GOLD FIND

At the southeast edge of the small Ziggurra was found a representation in gold of the lightning of the god Adad (Ramman, the thunderer). Different representations of Adad with a three-forked bolt of lightning in his hand, have been found hitherto (see Perrot-Chipiez II p. 643). This bolt of lightning is 45 cm. long and can therefore, have belonged to a life-sized statue of the god. The bolt was cut out of wood and covered with a covering (0.3 to 0.5 mm.) of pure gold. The three-forked end was welded to this covering. One end is broken off, but may have looked like the other. A few bits of the wood are still in the bolt. The whole thing was twisted together twice, no doubt for concealment, by some one who made way with it. The whole weighs about 290 gr. of which about 250 are gold. The value is about 800 marks (\$200).



ANOTHER ANCIENT FLINT QUARRY NEAR SENECA, MISSOURI

I HAVE just discovered, in the region near Seneca, Missouri, an hitherto unreported ancient flint quarry, which, though in a manner belonging to the same group of quarries described in my article in RECORDS OF THE PAST for October, 1905, is on a separate ridge-line and is of such size as to justify special notice. The quarry is situated on Jackson's branch about 7 miles north and $\frac{3}{4}$ of a mile west of Seneca in Newton County, Missouri, on a low chert ridge which runs northwest from Burkhart Prairie and juts out boldly at the confluence of two narrow valleys. From the base of this point flows a large spring the main head of Jackson's branch.

Having occasion to drive across an old thrown-out field skirting the above point, I noticed numerous white chert flakes and was soon surprised to see, lying about on every side, great numbers of crude and broken flint implements, rejects and hammer stones. At first thought, I presumed this material had been carried from the quarry, some two miles to the southwest in the Indian Territory, but investigation of this ridge-point soon revealed the deep pits and long, winding trenches of an ancient flint quarry between one and two acres in extent.

The point seems to be virtually a solid mass of pure cream white and pink banded homogeneous chert of the upper subcarboniferous age. Scarcely a flaw is found in the beautifully wrought blank blades or great blocks of flint in the pits except where it is seamed by lines of crystal quartz.

The quarry site is covered by heavy timber; some of it showing great age. The mass of the quarried flint seems to have been thrown

or carried to the base of the ridge and taken from thence to the various lodge sites located around the spring in the converging valleys. These sites cover several acres.

As to the antiquity—the quarry looks old—I would judge that it antedated the Indian Territory quarries, but this is mere conjecture, as allowance must be made for the different conditions surrounding the quarries.

Finished flint implements are found on the lodge sites, showing that here as not in the Indian Territory quarries, many implements were finished at once, although, of course, the greater part of the material was simply reduced to blank blades and carried to distant lodges for final elaboration.

On the lodge sites I found a few deeply weathered stone implements and a broken mill. No doubt further search will yield many interesting specimens.

One can but pause and think how well this site, with its ledges of pure flint, its gushing spring, rich valleys and deep forest teeming with game, fulfilled the simple wants of the aboriginal inhabitant and how happy, in his child-like simplicity, he must have been when his lodges, with the blue smoke curling above them, gleamed through the forest here centuries ago.

The plow has destroyed many interesting lodge sites in the valley, but as this quarry is on rather an inaccessible point we can hope it may escape the despoliation of ignorant miners and hunters for “pots of gold” till the state or nation takes steps to preserve this fine example of prehistoric work.

W. C. BARNARD.

Seneca, Mo.



THE “CENOTES” OF YUCATAN*

YUCATAN, Mexico's large peninsula, the old home of the Mayas, and the site of their wonderful ruins would be nothing but a barren desert were it not for its life sending, inexhaustible Cenotes. No large streams, or impetuous rivers cross the vast table land, which thousands of years ago arose from its watery depth, a wonderful structure, built by the tiny zoöphite architects, the coral polyps.

Rain and wind have smoothed the surface of this great coral rock under which flow subterranean rivers and streams, sometimes breaking out in caves or caverns, or forming natural grottoes, which the Mayas called “Cenote” (or Zenote) water-cave.

Carefully studying the course of the subterranean rivers, the Mayas marked the place where a grotto or cave was visible, and there they erected their cities.

* Adapted to the English from *Mexico al Traves de los Siglos*.



CENOTE NEAR UXMAL

Many Cenotes exist still amongst the old ruins, either in the center of a town, or on the outskirts, but always at a place easily accessible to the thirsty. Some are entered by stone steps, as the Cenote of "Mucuyche" in Uxmal, which is about 40 feet deep and many fish are found there—the Cenote fish,—said to be blind, like those in other subterranean waters.

The Cenote shown in the accompanying illustration is also in Uxmal, about an hour and a half from the town of Uxmal, a landmark of a former city.

One of the largest Cenotes is found in the village of Bolonchen—Nine Wells, called so for the 9 natural springs, which are in the center of the Cenote. Those 9 openings are nothing but perforations in the rocks receiving their water from some unknown cave, nature's reservoir of the rain water. A very narrow and steep path leads into it, and the light of day soon disappears to those who enter it. To make the descent into this cavern possible, the Indians constructed a very crude ladder, by tying the trunks of big trees together, utilizing their whole length, to make this ingenious structure as wide as possible. It is arranged in such a manner, that only one half is used for the descent and the other for the ascent of the "aguadores" (water carriers). The extremes of the trunks rest on the rocks or are sustained by big rafters. From the entrance of the Cenote, down to the 9 springs is a distance of 1400 ft., although the perpendicular depth is said to be only 500 ft.

Many traditions and legends exist among the Mayas about the origin of these Cenotes. They believe, that Bolonchen is the place, where a jealous mother once hid her beautiful daughter from her lover, so that he roamed in vain all over the land, without finding her hiding place. What became of the lovers, tradition does not tell, but since then the Cenote is called "Xtucumbi-Xunan," the hidden lady.

SRITA. NATALIE VON SCHENCK.

LOS ARCOS, MEXICO.



PALESTINE EXPLORATION FUND

THE advance of the railroad southward from Damascus toward Mecca may be delayed as to its completion for many years, but it has already had some effect upon Jerusalem, which is interested in being connected by that means more closely with Damascus than ever before. We hear that a new bridge is to be thrown across the Jordan and that it will be connected with a new road.

There have been several bridges across the Jordan near the Jericho fording-place, but they have never been properly constructed to endure the spring floods. The last one was set high above the stream but the piers on which its ends rested were not well constructed and soon became weakened. As for proper stone abutments, nothing of the kind was built.

It is now proposed to have a substantial bridge of five spans, long enough to cover the full channel and well furnished at either end with permanent approaches. It would be a singular joining of the old and the new, if an American bridge should be placed over the Jordan at or near the point where the Israelites entered the land, where the Baptist began his ministry, and where our Lord was baptized.

The development of wheel roads in Palestine began only a generation ago, with the construction by the French of the magnificent road from Damascus to the sea, and by the Turkish government of that from Jaffa to Jerusalem. But then came one to Hebron and then one to Jericho, and then some pieces of road were built in Galilee, and so every year now sees progress. In a few years the riding parties and the tents will be things of the past.

Some rare books on Palestine can now be obtained by writing to the home office at 38 Conduit St., London, W. and I mention a few which are seldom for sale: Robinson's *Biblical Researches*, Burton's *Land of Midian*, Thos. Wright's *Early Travels in Palestine*, Burckhardt's *Travels*, Van de Felde's *Jerusalem*, Lynch's *Dead Sea*, Warren's *Underground Jerusalem*, Merrill's *East of the Jordan*, Porter's *Giant Cities of Bashan*, De Saulay's *Journey*, *Tristram's Journal*.

For several years the rainfall in Palestine has been carefully noted and has shown an increase, but of course with a bad shrinkage now and then. The rain began in 1904, after the usual long months of drought on October 22 and kept up well into March. April had the latter rain of half an inch. There were 63 rainy days in all and the rainfall was 23.5 in., 8 in. more than in the preceding year, which had but 44 wet days.

THEODORE F. WRIGHT,
Hon. General Secretary for U. S.

42 Quincy St.,
Cambridge, Mass.



BOOK REVIEWS

EXCAVATIONS AT NIPPUR

PART I of the report of the Babylonian Expedition of the University of Pennsylvania on the Excavations at Nippur has just appeared, and does high credit to both the University and the author of the text, Clarence S. Fisher. This part deals with the physical features of Babylonia, and the topography of Nippur and its walls.

The relation which geology bore to the early civilization in this region is well summed up by Mr. Fisher.

This deposit [yellow clay mixed with sand of which the delta is formed] played an important role in the development of the country, entering in some way into nearly every phase of Babylonian life. In the first place the combination of clay, chalk and sand made an unusually rich and fertile soil, so that the valley eventually became famous as one of the most productive and hence richest countries of the ancient world, in many ways the successful rival of Egypt. But of more importance to us from an archæological standpoint is the fact that this clay was adapted particularly for building purposes. The civilization and culture consequent upon the growing power and wealth of the people created the desire for extensive buildings of various kinds, and developed an ingenious and highly efficient system of construction, based solely on the use of clay. In buildings it was used for floors and roofs as well as for walls. In this case it was laid up *en masse* or moulded into bricks and tiles used in their crude sun-dried condition or fire-baked. Out of it were made pipes and conduits of many sizes and patterns for the conveyance underground of water to different parts of the houses and through the towns; and also for the carrying away of household wastes. In addition to these uses of clay there was its

employment for literary purposes. Carefully cleaned, by washing, of the sand and other impurities and then shaped into tablets and cylinders, it became the medium for recording the history, literature and even the letters and commercial transactions of the everyday business life of the people.

The rise and decline of cities due to the changing course of the Tigris and Euphrates rivers, the introduction of canals as a last resort to preserve their commercial importance, and the evidence furnished by ancient maps and designs on clay tablets which have been discovered indicating these changes and the approximate dates, are described.

Nippur, like our modern cities, was composed of two parts, an up-town and a suburban district. The substantial official section or inner city is the part represented by the present mounds. The less solidly built residence section of the well-to-do class has left but few remains, while the huts of the poor, being made largely of reeds, have left no signs of their existence.

For a description of the inner city and its walls we must refer you to the volume itself, in which the magnificent plate illustrations, maps and diagrams, taken in connection with the text, give as clear an idea of the excavated ruins as can be gained without actually visiting them under the guidance of one as familiar with the work as Mr. Fisher.

There are 5 parts to follow, the second is on the Fortress; the third on The Early Strata in the Temple Area and the Temple of Bel; the fourth on the Ruins of Tablet Hill and Miscellaneous Constructions; the fifth on The Palace and the sixth on Pottery and Burial Customs. From this outline it will be seen that the complete series will be valuable as a record of the discoveries in this most interesting of ancient cities—Nippur.

The advance sheets of Part II on *The Fortress* show that this section of the work is of equal if not greater interest than the first. Among the interesting points brought out are: The development of the corrugated bricks used in the North or the Ur Gur wall; the peculiar thick walled rooms found along the inner side of the wall; also a full description, accompanied by diagrams, of an ancient kiln for baking pottery which differs very little from those in use at the present time.

The requirements of the specialist are satisfied in this work by all the exact details of the walls and buildings while the needs of the larger class of lay readers are not lost sight of, but information of a general character is interwoven with the more technical material.

THE WISCONSIN ARCHAEOLOGIST

The first Archæological Bulletin of the Wisconsin Archæological Society, issued under the auspices of the State has recently appeared. It is devoted to a discussion of the *Aboriginal Pipes of Wis-*

consin, by Geo. A. West and accompanied by a large number of illustrations showing a remarkable variety in the style and designs of these pipes.

In the introduction Mr. West devotes a few pages to the aboriginal trade among the Indians of Wisconsin. Evidences of the extent of this trade are seen in the copper implements from the Lake Superior region; obsidian implements, of which P. V. Lawson has listed 50, which must have come from the Rocky Mountains; a specimen of amazon stone from the Rocky Mountains; and specimens of bone evidently from the tribes of Indians along the Northwest Coast, and other foreign objects, which are found scattered through the State in the numerous mounds. There are pipes whose form is typical of New England and Tennessee which are figured and described in the Bulletin.



EDITORIAL NOTES

HISTORICAL RELIEF IN PALAZZO SACCHETTI:—This relief represents the emperor Septimius Severus presenting his son Caracallus to the Senate and may prove to have dated from the time of Septimius Severus.

THE EXCAVATION OF HERCULANEUM:—The central commission of archæology at Rome have decided to found, under the direction of Mr. Waldstein an international society for the purpose of excavating Herculaneum. This project has been approved by the Italian Government.

MANDAN REMAINS IN NORTH DAKOTA:—Since the article on *Mandan Remains In North Dakota*, which appeared in RECORDS OF THE PAST for December, the State Historical Society of North Dakota has brought to our attention one or two further facts which are of interest. They report that some lodge circles have been noted which average 40 ft. in diameter while some of the Medicine lodges in other villages than that described in our December, 1905 issue are as much as 60 and 70 ft. in diameter. Some of the mounds on the outer edge of the village site were artificially fortified with projecting bastions. The length of time which this Mandan village was inhabited is estimated at 10 years on the basis that every layer of charred corn-cobs intermixed with ashes and soil represents one year.

The village itself was abandoned 20 years previous to the Lewis and Clark visitation, on a quarrel between the Mandans and Arikaras. Lewis and Clark camped on top of the hill above the Indian village towards the southwest where Fort Hancock was built in 1872, an infantry post, while Fort Lincoln—a cavalry post, was built one

year later on the flats below the hill and southeast of it. It was Lewis and Clark's fourth camp in North Dakota. The Mandans cultivated corn, beans and melons. Charred corn-cobs as well as the shells of melon seeds are found in the rubbish heaps.

MOUNDS NEAR ALBERT LEA, MINN:—Mr. D. R. P. Hibbs has called our attention to 5 distinct mounds on the shore of a lake about 5 miles from Albert Lea. One or two of these have been opened, at times, in a crude way and disclosed remains of a race of people,—whether Indian or an earlier race has not been determined. He says that: "About 6 ft. from the top on a level with the general surface of the ground there is found a layer of bones, of about 3 inches in general thickness, among which are bones of men, women and children, all placed there at the same time, as would appear, from the fact that all the bones are in this one layer. There are 5 such mounds on the top of a hill, from which undoubtedly a great deal of dirt has been washed down, the circles being contiguous, and in a line.

"From the fact that the Sioux did not bury their dead, it would seem that they might have ante-dated them. One specimen that I obtained had perfect teeth, but the front teeth were all flat and broad on the surface. I never heard of any implements being found. Some advance the theory that there had been a great battle and all these people had been killed and then buried at once,—too many for an overhead burial. These mounds are about 20 to 25 ft. in diameter at the base."

EXCAVATIONS AT MOUNDVILLE, ALABAMA:—In an exceedingly interesting article in *Harper's Magazine* Mr. H. Newell Wardle gives the results of the excavations, near Moundville, Alabama, carried on in the spring of 1905 by Mr. Clarence B. Moore, for the Academy of Natural Science of Philadelphia. The smaller mounds found here are arranged in an elongated circle with the shorter diameter extending east and west. Four "great structures form a triangle in the north with its apex resting on the center of the circumscribed plain and its lateral elevations in the line of the oval." The whole area is a vast cemetery.

The site is evidently of very ancient occupation, for in many cases a black line in the soil or a bone or two and some ornaments is all that is left to mark a burial. There are no indications of trade with white men so this site must have been abandoned before the white men appeared.

As most of the implements found are of a peaceful or ceremonial nature, this seems not to have been a war encampment. Many gorgets, cups, bottles, bowls, and pendants of copper were found as well as vases and hair ornaments. The most important of all is the stone vase of the crested wood-duck. It is carved from diorite and is 11 ½ in. in diameter. The head and neck of the bird form the handle. The conventional flat tail juts out horizontally from the opposite side.



RECORDS ^{OF} THE PAST

VOLUME V APRIL, 1906 PART IV



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D. D., LL. D., Editor



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APRIL, 1906

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RELIEF FROM AUGUSTUS' ALTAR OF PEACE REPRESENTING MOTHER EARTH

RECORDS ^{OF} THE PAST

VOL. V



PART IV

APRIL, 1906



THE PILLAGER INDIANS

A LONG, deep, clear and very cold body of water called Burntside Lake, north of Lake Superior, near the Canadian boundary, contains, among over 100 other beautiful islands, a certain sunny islet that is of great interest to the archæologist.

The largest islands are covered with a growth of pine, balsam, cedar and birch trees so dense that the sun never penetrates it. Others are clean, solid mounds of granitic rock strewn, now and then, with boulders of jasper and practically devoid of vegetation. Others still, half-clad with underbrush, produce strawberries, wild roses, blue berries and wild currants in size, quality and luxuriance that are unknown in more southern latitudes.

The magnificent waters of this lake, known to be over 1100 ft. in depth, swarm with land-locked salmon and other cold-water fish; the remote bays, at nesting time, teem with wild ducks, brant, geese and other water-fowl, and the inlets are covered with pond lilies and lotuses of unusual size and fragrance, or (if shallow) with rank crops of wild rice.

These islands and waters constitute the hereditary home of the Pillager Indians, who are pagans.

Many years ago the government, having sold their ancient home lands south of the Canadian boundary, undertook to remove the Pillagers to the Leech Lake country of Minnesota; but the hereditary

chief, the members of his family and a band of immediate followers remained in the haunts which they have occupied from time immemorial, notwithstanding the title to those parts which lie in the United States had passed to the pale faces.

One of these islands (known as Flower Island) is, as it has been for generations, the seat of the Pillager kings. On it sleep, according to tribal tradition, over 50 successive Pillager rulers, the ancestors of the present chief or king, who, he says, must have reigned an average of 30 or 40 years each, as he himself has been chief for more than half a century.



PILLAGER INDIAN (PAGAN) CHURCH, FLOWER
ISLAND, LAKE SUPERIOR

Think of a dynasty extending over a period of perhaps 20 centuries!

The more modern graves are carefully roofed with cedar bark, which, when kept dry and away from the earth, is almost imperishable. The very ancient graves have been essentially obliterated by the ravages of the elements. At the head of each of the traceable graves is carved the peculiar heraldic insignia of the king who sleeps beneath, and above him are placed receptacles for the *mah-no-min* (wild rice), fish, berries and other food which are brought annually by the related members of the tribe to appease, as they suppose, the hunger of the departed.

Between the present regal lodge and the tombs of the ancient kings stands a long structure the frame of which is composed of bent ribs of riven cedar (as shown in the illustration) which may be called

the arch-diocesan church or temple of the nation. It is not over 8 ft. in height but something like 20 ft. in width and 60 or 70 ft. in length.

Next to the walls on the inside of the temple is a pathway or walk of sand, bark and gravel extending the entire circuit of the structure. At either end, on the inside of the circle formed by this path, is a god—Manitou. One god is a rude, bluish-black bird of carved wood mounted on a post—the Evil Spirit. The other is a white bird of equal size and also on a post—the Good Spirit.

No other temple is permitted. This sacred structure always is erected on the chief's lands and near his home.



PILLAGER INDIAN CHIEF'S TEPEE, FLOWER ISLAND

At certain seasons, led by the king himself, the bucks march round and round the black and white gods, gesticulating and chanting in a most weird and mournful manner, from night till morning and morning till night for several days in succession, until the strange rites of the tribe are complete; while near a fire at the entrance to the temple a solemn old buck beats the ceremonial tom-tom with unceasing monotony. The squaws have no part in these ritualistic performances, and apparently no right to be interested in them. With the Pillagers, as in ancient times in other lands, the law is, "Let your women keep silence in the churches".

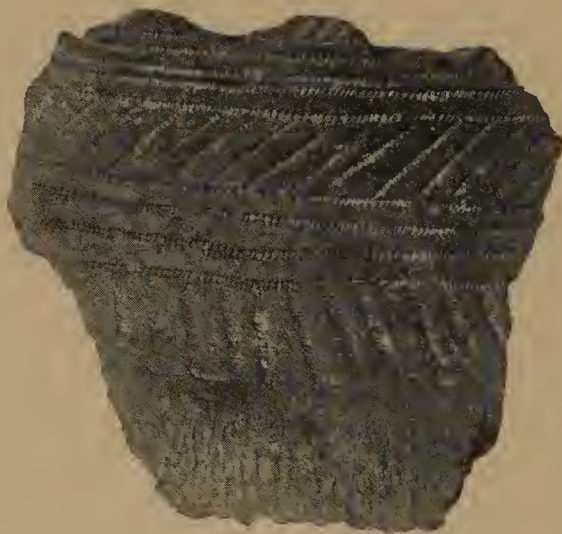
The present king states that these ceremonies, which are necessary to bring fish, fruit, rice, rabbits, pheasants, victory and health for the ensuing year, have never been changed by his people.

"My fathers were created here," he says, "but once, many ages ago, they were driven farther to the south by too much water. When the great flood dried away they returned and have ever since fished and hunted and buried their fathers here".

Does not this tradition refer to a great glacial movement? All of the rocks and rock islands in the vicinity bear the unmistakable evidence of apparently two or three glacial movements.

On these islands have been found copper and flint spear and arrow heads, and numerous specimens of the finest prehistoric pottery. Copper, of course, is obtained on the shores of Lake Superior, but the flint spear and arrow heads must have been brought from points several hundred miles distant. The pottery cannot be entirely of local manufacture because it is of three very distinct colors: brownish black (very hard and fine-grained), yellow and pale brick-red.

The rim fragments of a sort of tub found here described a circle over 30 in. in diameter, and the smaller piece shown in the illustration (both specimens from Flower Island) is a segment of a recep-



FRAGMENT OF BLACK POTTERY

tacle that, if of a depth proportional to its circumference, must have had a storage capacity of not less than 15 gallons—an unusually large prehistoric vessel.

The larger and blacker piece is from a dish that would not hold over 6 quarts.

The king says that all of the islands in this section are or formerly were strewn with fragments of this character, but he does not know who made them. His people, he assumes to know positively, did not make them, and the story brought down by his fathers is to the effect that ages ago Pillagers exchanged fish, rich and skins for vessels of this character with wealthy and friendly Indians from the far south who perished long ago—so long ago, he says, that the names of the people and the place of their abode have been lost.

Coal measures have been uncovered in Alaska and large clay vessels are found on the rock islands north of Lake Superior. Will not the careful man of science trace these prehistoric vessels, as he can, to the original clay beds from which they were produced? That will be a step, and perhaps an important step, in the direction of identifying their original manufacturers.

Personally I do not believe that either the prehistoric pottery or the prehistoric mounds found in profusion mostly in the Mississippi Valley are very old, or that they are destined long to remain strictly prehistoric.

Flint and copper implements and pottery are not found beneath or naturally imbedded in the glacial debris. They are on top of it, and frequently connected with the mounds. Therefore, these earth-works cannot be and probably the implements are not preglacial.

If the theory which I have elsewhere undertaken to set forth be true, that the popularly so-called glacial epoch is merely one of a succession of vast glacial seasons of fixed periodicity, like our annual winters, and that (having relatively like solstices of spring, summer and autumn) it is about 12,500 years waxing and 12,500 years waning, then the people who erected our prehistoric mounds and made and used the pottery found in them and on Flower Island were active not more than 5,000 or 6,000 years and perhaps as recently as a very few centuries ago.

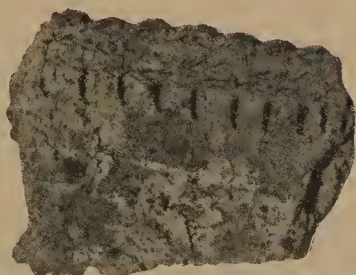
A people may completely lose both arts and language more easily and more quickly than is popularly supposed, as witness the 10,000,000 negroes in the United States, the first handful of whom came to these shores less than 3 short centuries ago. They do not possess even a syllable of their mother tongue nor a tradition of Africa.

Thus we may be led to believe that where, as with primitive peoples, no written records exist, history and tradition perish with the obliteration of tribal arts and mother tongue.

Undoubtedly, if half as much money as is being expended in the excavations of Africa and Asia Minor were placed in scientific hands for the purpose of uncovering pre-Caucasian civilizations in America, the results would be even more definite and satisfactory, and perhaps more valuable.

FRANK ABIAL FLOWER.

WASHINGTON, D. C.



INSIDE



OUTSIDE

FRAGMENT OF RIM OF LARGE JAR



RELIEF FROM AUGUSTUS' ALTAR OF PEACE

AUGUSTUS' ALTAR OF PEACE

ROME of to-day is always ready and eager for some new resurrection of the evidences of the glory of her ancient history. For the past 7 years, the excavations in the Forum have served to keep alive popular interest and anticipation, but recently attention has been turned to excavations on the little street of S. Lorenzo in Lucina, a few yards to the west of the Corso, on what was soon shown to be the site of the Ara Pacis Augustæ, Augustus' Altar of Peace. When Cæsar Octavianus, the later emperor Augustus, turned his eyes toward Rome after the Battle of Actium B. C. 31, he faced, as master of the Roman world, a problem the solution of which demanded greater powers than he had up to that time been called upon to display. The wounds made by the civil wars were to be healed and peace was to be restored throughout the entire Roman world. Order was to be brought out of chaos in the governmental control of Rome, Italy and the provinces. It was not until 13 B. C. that Octavianus could consider that all these aims had been achieved. Then he returned to Rome with all the world at peace. In the enthusiasm of the moment the Senate decreed that an altar should be erected to Augustus in the Senate House, but the emperor showing his repugnance to this worship of his people, preferred to glorify his deeds rather than himself and dedicated the altar to the Divinity of Peace.

Our knowledge of this altar comes from Augustus himself. In the summary of his life work, which Suetonius tells us he caused to be cut in bronze and placed in front of his mausoleum in Rome and of which we have a reproduction on the walls of a temple of Augustus and Rome at Ancyra in Asia Minor, he tells us "that he returned to Rome from Spain and Gaul in the consulship of Ti. Nero and P. Quinctilius (13 B. C.) after everything in these provinces had been arranged as he desired. Then the Senate out of thankfulness for his safe return dedicated an altar in the Campus Martius to the divinity Pax Augusta upon which magistrates, priests and vestal virgins might offer a yearly sacrifice." Then in the fragments of calendars we find festal days assigned to the cult of the Divinity of Peace. The statement given with July 4 is "because on this day in the consulship of Nero and P. Quinctilius (13 B. C.) the altar of Peace was founded by Augustus" and with January 30, "because on this day in the consulship of Drusus and Crispinus (9 B. C.) the altar of the divinity Pax Augusta was dedicated." Four years and a half then elapsed from the laying of the corner stone to the completion and dedication of the new sanctuary. It is noticeable also that there are two feasts of Peace, one in summer and one in winter. With the exception of a reference to the bringing of victims to this altar, in Ovid's *Fasti* and in the records of the Arval Brotherhood; and of the representations on the coins of Nero and Domitian, there is no information concerning the altar coming to us from ancient days.

In the middle ages the site of the altar was covered with rubbish and a cemetery which belonged to the adjoining church of San Lorenzo took its place. This cemetery dating in the latter part of the VIII Century, was about 10 ft. below the present level of the city.

In the XIII Century this also disappeared and over it and the Altar of Peace beneath, Cardinal Hugh Evesham, titular of the adjoining church, built his palace, which finally reached the hands of the Ottoboni branch of the Ludovisi family in whose possession it remained until 10 years ago when it became the property of Signor Almagia.

Mention of the discovery of beautiful reliefs on or about this site has been made on at least 3 occasions, twice during the XVI Century and once in 1859.

In the early part of the XVI Century, certainly before 1530, five reliefs of remarkable beauty were brought to light and were placed in the Palazzo Capranica. In the correspondence of Cardinal Ricci de Montipulciano, who resided at Rome in the Villa Medici and served as the antiquarian agent of that famous family, there is a reference to the second find. Early in 1569 he wrote to the secretary of the Grand Duke Cosimo of Tuscany that he had secured 9 large blocks of stone with reliefs on two faces. These he had sawn in two for ease in transportation. Only two appear to have been sent to Florence at this time but two others were cut and returned to the owners of

the site and the remaining 5 were stored in the Villa Medici. In 1584 the Medici purchased the Capranica collection which contained the 5 reliefs first discovered. These were taken to the Villa Medici, fantastically restored in stucco and set in the garden front of the Casino, now the French Academy, where they may be seen to-day. Those discovered in 1568 and now in the Uffizzi Gallery were restored in marble but did not reach Florence until 1780. When Duke di Fiano in 1859 strengthened the foundations of his palazzo on the south side, a number of panels were brought to light but were not recognized as parts of the Ara Pacis. Some were placed in the vestibule of the palazzo and remained there until 1898 when they were purchased by the Italian government and set up in the Museo delle Terme, others were left underground because of fear of undermining the houses in the vicinity. Of the find of 1568 one of those left in the court of the palace was cut in two in the time of Cardinal Ottoboni; and the outer half, with a scene of the sacrifice, was sold to the Vatican, but the other side was bought by a stone cutter who used it for a grave-stone of Monseignor Poggi in the church of the Gesù. This was accidentally discovered in March, 1899, and likewise removed to the Museo delle Terme. Finally there are 3 other pieces of which we have knowledge, one in the Louvre, one in Vienna, both extant, but a third taken to England disappeared, not however, until a drawing was made which shows that it had been largely restored.

It was early recognized that many of these pieces formed part of one monument, but Frederick von Duhn in articles in the *Annali* first claimed that the various fragments belonged to the Ara Pacis. Professor Petersen enlarged and corrected the work of von Duhn in an elaborate monograph published in 1902. This production led the municipality of Rome and the Ministry of Public Instruction to approach Signor Almagia and request the privilege of excavating beneath his home. His permission was readily granted, and excavations began in August, 1903, but ceased in February, 1904, because of lack of funds. Fragments were removed from time to time and the sub-structure, 16 ft. below the street level, was partially laid bare. Vaulted passages have been constructed so that it is possible to walk along the foundation on two sides, the east and the south. At the end of one of these passages there may be seen to-day, partially embedded in earth and rubbish, a most beautifully carved panel showing the sacrificial procession; a companion of those in Florence, which it is impossible to remove at present because this would undermine the foundations of the Palazzo.

The recent excavations make known to us the ground plan of the altar. It consisted of a platform $3\frac{1}{4}$ ft. high, measuring $19\frac{1}{2}$ by $11\frac{1}{2}$, made of blocks of tufa approached by steps on four sides, both originally covered by marble slabs. This was in the middle of a sacred area 38 ft. long and 35 ft. deep, enclosed by walls forming a marble screen, beautifully adorned in relief. Great marble blocks on the level of the lower step formed the support of the enclosing walls,

which consisted of blocks of Carrara marble 2 $\frac{1}{2}$ ft. in thickness, about 12 ft. high and carved on both faces. In the IV Century a brick wall was built about the altar and, as the level of the city had at that time risen about 7 ft., steps were built on the east side, toward the Corso or old Via Flaminia. On the marble blocks originally forming the foundation of the enclosing walls, there may be seen discolorations showing the position of the jambs of the doors and indicating a doorway of about 11 $\frac{1}{2}$ ft. in width. The surface of these



ACANTHUS LEAVES FROM AUGUSTUS' ALTAR OF PEACE

marble blocks is also scratched in circles which were used by the youth of Rome for their games, at a time when reverence for the altar had diminished or disappeared. The ground plan also indicates a doorway on the west side and 5 marble steps of low tread up which animals for the sacrifice might readily be led. The front of the altar was probably on the east or Via Flaminia (Corso) side, inasmuch as steps were placed here in the IV Century and as in this doorway

pains were taken to conceal a channel cut in the marble for carrying off the water, whereas a similar channel is in plain sight and mars the surface of the west doorway. Information as to the form of the enclosing walls is obtained from types of coins of Nero, showing the east face, and of Domitian, showing the west face, also from various extant panels and fragments. It has been possible to set up a partial restoration in the Cortile of the Museo delle Terme, which archæologists in Rome hope in the future to make very nearly complete. From the coins we learn that pilasters stood at the corners of the enclosing walls and formed the jambs of the doorways. The upper panels of the exterior were filled with figures in relief, representing divinities appropriate to such an altar or individuals engaged in the sacrifice or taking part in the sacrificial procession.

The lower field was filled with richly blooming plants and running vines. On the inner side in the upper panels were wreaths and garlands of fruit and flowers hung from the heads of bullocks; the lower portion was cut in panels in imitation evidently of wood construction, perhaps of an arbor. The recent excavations on the site of the Altar of Peace have not only made known to us the ground plan of the monument, but have brought to light fragments of the base, large sections of the panels engraved in vines and flowers and mutilated figures of the procession and of the sacrificial scene. The ornamentation of each panel of the lower part of the wall consisted of a plant system originating in a group of great acanthus leaves. Plants growing out of the acanthus leaves wind gracefully to the right and left and end in buds or rosettes, or with the main stem support swans. In each system there are pairs of these swans with outspread wings and with head and long neck turned away from the body. The swans appear here as sacred to Apollo, the patron divinity of Augustus. On some leaves there are seen lizards, snakes, frogs and crickets. The appearance of the frog and the lizard is accounted for by some in accordance with the story of Pliny, that when the portico of Octavia was built two architects, Sauros (Gk. lizard) and Batrachos (Gk. frog), were not allowed to place their names on the monument and carved a lizard and frog on the columns so as to secure immortality. It is an interesting fact that a lizard and frog are seen on one of the columns in San Lorenzo Fuori le Mura which are said to have been taken from the portico. Pliny's story has been questioned, for Vitruvius declares that Hermodorus was the architect of the portico. Pliny's theory does not explain the appearance of all these little creatures, and it is more probable that the artists intended to represent plant and animal life of simpler form enjoying and sharing in the blessings of peace.

One of the most beautiful reliefs of the upper panels is that representing Tellus, Mother Earth.* On a stone seat reclines a queenly woman holding a child in a motherly way on the left knee. Another

*See frontispiece.



RELIEF FROM AUGUSTUS' ALTAR OF PEACE

child is kneeling by her side held close to her by her right hand. A thin garment, veiling her bosom, has slipped from her neck on the right side and a rich mantle is laid over the loins and lower limbs and is also drawn up over the head and back, not covering the folds of the hair, but serving as a frame for the profile. Two young men appear on either side, the left one on a swan and the other on a fantastic sea dragon, typifying respectively air from the land and wind from the sea. The garments which cover their lower limbs are blown out behind by the wind and form a circular frame for the upper portion of the body.

The earth goddess with children about her is not new in art, nor are divinities borne aloft by swans and dragons conceptions hitherto unknown, but Professor Petersen has suggested that the

union of Mother Earth, the winds and the water in one composition may be due to the lines (29-32) in the *Carmen Sæculare* of the poet Horace, who undoubtedly saw this monument.

Of the various panels representing the sacrificial procession, those in the Uffizzi Gallery picturing the members of the imperial family are the most interesting. In one of these there are two family groups, both marked by the presence of husband and wife. The tall young man on the left is Drusus, who died in B. C. 9, greatly mourned by the emperor and by the people. He wears a military cloak as he has left his command in Rhætia to attend the dedication of the altar. His wife the beautiful Antonia stands immediately before him and their conversation is interrupted by the warning gesture of the figure between who calls for silence (*favete linguis*) lest they mar the sanctity of the occasion. The child at their feet is either Germanicus or the later emperor Claudius. The group to the right may be Tiberius and his wife Julia whom he, much to his disgust, was compelled to marry after the death of her former husband Agrippa. The wife may be the sister of Antonia in the first group, then the husband would be L. Domitius Ahenobarbus the grandfather of Nero.

Agrippa played a very important part in bringing about the reign of peace and we should expect to find him among the members of the imperial family. The central figure in another panel has been recognized as Agrippa because of the distinction suggested by the pose and the countenance. Some see here a sadness of expression natural to one who has suffered much or intended to suggest the departed soul. He is preceded by a young man who bears on his shoulder the official axe, for Agrippa appears here as a pontifex. The boy grasping his toga is Lucius Cæsar, his son, and the beautiful woman on his left may be Julia his wife, or Vipsania Agrippina his daughter, whose husband, Tiberius, we are now tempted to take from the other group and place beside her. Two flamines or priests of special cults are seen in the corner of this panel. They wear the insignia of their office, the cap with the apex and the peculiar cloak. This group of priests is continued on the panel still buried under the ruins of the old Palazzo on the Corso. [see p. 104].

These magnificent picture reliefs are the first examples of the superb imperial art which is still further illustrated and glorified by the sculptures on the arches of Titus and Trajan. In the imperial period Greek and Roman art, independent in origin, met and produced a new style. Greek artists were called upon by the Romans to produce portraits and portrait busts and the Greeks replied by giving an exact reproduction of nature. The head of the boy Augustus found at Ostia and the statue of the same emperor from the villa of Livia at Prima Porta, now in the Braccio Nuovo, are illustrations of this art of portraiture. In this representation of the imperial family and the Roman aristocracy taking part in the procession, we have a series of historical portraits. There is evidence here of the modeling in

clay and the importance of gem engraving is seen in the heads of the background which are cut in the manner of cameos, and again in those in the foreground which show in full relief. In these reliefs are found the primary elements of style of the Roman triumphal art, which reached its acme in the II and III Centuries A. D., and which finally gave rise to the continuous method of representation which played such an important part in mediæval art even down to the time of Michael Angelo.

JAMES C. EGBERT.

COLUMBIA UNIVERSITY.



AMONG THE RUINS OF EPHESUS

LEAVING the Smyrna-Aidin railway at Ayasalouk, a village of 300 or 400 inhabitants, the first object which particularly attracts attention is an aqueduct stretching from the mountain, half a mile distant, across the plain, by the modern village, where it is 25 or 30 ft. above the ground. Many of the arches are gone. Upon the piers or arches still standing, storks have built their huge nests of sticks, and their occupants sit, or stand on one foot, unmindful of the traveler who passes beneath them. This aqueduct is comparatively a modern structure, built of Roman bricks. In length and breadth they are nearly the same as American bricks, with a thickness of about an inch. They are red, very hard, and easily recognized, whether in the ruins of the baths of Caracalla at Rome; in the Roman remains at Old Sarum, near Salisbury, England; or in this picturesque conduit on the Ephesian plan. The aqueduct was built to some extent from older structures, for in the brick-work are set many blocks of white marble, some of which are beautifully inscribed with Greek characters, still sharply defined, although exposed to the sunshine and storms of centuries. These blocks have been utilized promiscuously, some of them with the inscriptions upright and others the reverse.

Westward through a mingled mass of weeds, bushes and crumbling remains of buildings, we climb a rugged hill to the castle of Ayasalouk. It crowns the northern and highest part of a mile-long ridge, and evidently was a fortress of great strength. It is mainly built of brick, painted red and white, in the Saracenic style, and is deserted.

The accompanying view is of the entrance to this interesting fortress, from which the traveler looks out upon the plain of Ephesus to the Ægean sea.



ENTRANCE TO ANCIENT FORTRESS

Through this wide stretch of alluvium, the Caystrus meanders and the plain has greatly extended its limits seaward since the ships of the Greeks and Romans crowded the Ephesian harbor. To the left, a mile and a half away, lie extensive ruins, the intervening fields doubtless concealing many valuable works.

Descending the south-western part of the ridge, we reach the ruins of the church of St. John, the Evangelist. It was once converted into a Mohammedan mosque, and the Saracens added a fine marble front, with a beautiful stalactite portal. Its roof is gone. The walls have been rent by earthquakes and it is deserted and crumbling, but how interesting! Within are heaps of debris, and we make our way through tall weeds, over fragments of columns, bases and capitals, and enter a room where two pillars remain standing—monoliths of syenite, 6 or more feet in diameter. A large fig tree has grown close to one. It is remarkable in how many widely separated places we find beautiful, and in many instances massive columns brought from the quarries of the Upper Nile. In the Cathedral of St. John at Tyre, on the Lebanon, between the Jordan, and in the ruins of this once ornate and historic church, finely-wrought, ponderous syenite columns report to us the skill and enterprise of far-away times and peoples.



FORTRESS, ST. JOHN'S CHURCH AND RUINS OF TEMPLE OF DIANA

One tradition states that St. John was buried under this church. Within its walls the famous third Ecumenical Council of Ephesus was held, A. D. 431.

We are allured to a large excavation which we enter and find ourselves standing among the shattered remains of a great edifice. Fluted drums, columns, heaps of white marble fragments—some finely carved and others very large—rest upon a floor depressed 12 ft. below the surface of the plain. We are on the site of the temple of the “great goddess Diana.”

A half-century ago the precise location of the temple of Diana was conjectural. In 1858 Mr. John T. Wood, who had been civil engineer on the Smyrna-Aidin railroad, began excavations at Ephesus to find the place of the temple. In removing the refuse from the great Theater, he found a number of inscriptions one of which gave a clue to the desired discovery. The Magnesian gate was reached, from which Philostratus, a Greek writer, states that a covered way led to the temple. Outside the gate Mr. Wood found, 11 ft. below the surface, an ancient road leading towards the northeast, with a row of square piers at the side, which evidently once supported the covered way mentioned. Explorations along this road were continued by him for 3 successive years. One of the inscriptions stated that pro-

cessions from the temple entered the Magnesian gate and returned by the Coresian gate, which he also found, and he concluded that the temple must have stood at the junction of these two roads. Carefully noting where they would meet and digging down at that point, he struck the angle of a wall upon which he found an inscription stating that the Emperor Augustus had rebuilt the court wall around the temple of the goddess Diana. Subsequent excavations thoroughly identified this place as the site of the celebrated temple.

In the foreground of the accompanying view are some broken fragments of the temple of Diana. Just beyond is the church of St.



THE STADION—EASTERN PART

John; and, on the left of the background, is the Fortress crowning the summit of the hill. Here is a place to linger.

The hillock called Mt. Prion is not far away. It is of white marble and, with an adjoining elevation, was the quarry for the ancient city. In its sides are numerous cavities, one of which has the reputation of being the cave of the Seven Sleepers.

Ascending the hill-side we reach the upper edge of the Stadion. Its massiveness impresses us. In shape it is like a horseshoe magnet. It is nearly 700 ft. long and 200 broad, with ranges of rock-hewn seats which would accommodate 76,000 people. We look down the long rows of seats sinking tier below tier to the arena. No throng

is there, but silence reigns everywhere unbroken save by the clatter of our horses' feet as we descend to the great inclosure and ride to the entrance at the western end.

The southwestern gate is in a good state of preservation. Standing before it, one looks over much of what remains of Ephesus of 20 centuries ago. A little to the north are extensive ruins of what was called the palace of the town clerk. A few rods westward is a slight eminence strewn with marble fragments of the temple of Jupiter Serapis. In the same direction, half a mile away, rises a long ridge called Coressus. Along its summit, for a mile and three



THE THEATER

quarters, runs an ancient wall of polygonal blocks of stone. The intervening space is crowded with brick, fragments of cement, ruined arches, broken columns, capitals and architraves,—a spectacle of desolation,—but witnessing to the extent and grandeur of the city in its palmy days. Nearly half-way to Mt. Coressus is a low, marshy tract where once was the harbor. On the northern edge of the marsh is a copious spring with sufficient supply for a city.

Leaving the entrance of the Stadion we come to a large mass of marble which is said to have been once used as a baptismal font. A little beyond it, on the slopes of Mt. Prion, we find the Theater mentioned in the Acts of the Apostles. The debris has been removed

revealing much of the beauty, richness and magnitude of this structure. In front of it is a street whose pavement is furrowed with the marks of chariot wheels. At the foot of the mountain a confused mass of cornices, capitals, fluted columns and large square blocks of marble marks the spot where a temple in honor of Claudius once stood. Southward around Mt. Prion we pass ancient baths and a small theater called the Odeum, in which poets and musicians submitted their works for the public approval and contended for the prizes. Partial excavations have revealed a large number of granite columns, marble seats—some with inscriptions—and a profusion of sculptured fragments. Eastward, on a line with an ancient road which now lies deeply embedded in rubbish, is the reputed tomb of St. Luke, having a bas-relief symbol of the ox and the cross. On our left is the ruin of the Gymnasium. Great masses of brick and stone project at regular intervals from the surface of the ground, with here and there an arch, the whole covering more than an acre.

Soon we reach the triple or Magnesian gates through which passed the road to the city of Magnesia, 15 miles southeast of Ephesus, in the valley of the Meander. Each gate is 8 or 10 ft. wide, and the old pavement has been uncovered. We are in the Via Sacra leading to the temple of Diana. Extensive excavations have been made on a line with this road, exposing the substructures of numerous buildings and many sarcophagi finely sculptured and inscribed with Greek characters; while on the left are numerous open tombs,—the whole a great necropolis.

We re-enter the rich plain. The walls inclosing the road are largely formed of fragments of marble pillars, statues, entablatures, etc. Again we are under the ruined aqueduct. We turn thoughtfully away from Ephesus, so full of sacred and secular associations, and whose wealth of ruins, made available by the spade of the archæologist, casts new light upon the revealed Word and the history of the Christian church.

JOHN EASTER.

CLIFTON SPRINGS, N. Y.



THE DOLMEN OF WERIS*

NEOLITHIC man, as we know, practiced the worship of the dead and deposited their bones, sometimes in natural grottoes, sometimes in artificial caves called *dolmens*, built of huge blocks of rough stone of tabular form, most frequently covered with earth.

We still have in Belgium two good specimens of these monuments, both situated at Wéris, near Barvaux-sur-Ourthe.

*Translated from the *Bulletin des Musées Royaux des Arts Décoratifs et Industriels a Bruxelles* for RECORDS OF THE PAST, by H. M. W.



DOLMEN OF WERIS, BELGIUM

The one which is now represented in our section by a splendid model $\frac{1}{4}$ natural size made of "staff" and painted, is known as the older of the two. It was first brought to the attention of archæologists by Geubel, then by Daufresne de la Chevalerie, some years ago.

Completely uncovered to-day, it rises in the center of an extensive plain, and is formed of large blocks of a conglomerate of the region. It measures about 10 meters in length. Belonging to the State since 1882, it has been recovered from its ruins and surrounded by a railing with very poor effect.

The uncovering of the second dolmen dates from 1888.

The indications of comparative archæology allow us to assign to these monuments an age of about 4000 years. Our two dolmens or covered graves would be, according to Montelius, the equivalents of the stone coffins of the IV Scandinavian age, which he places between 2100 and 1700 B. C.

BARON ALFRED DE LOE.

ROMAN BATHS IN LONDON:—In Ivy Lane, Newgate street what has the appearance of being a Roman bath has been uncovered. It is a room 18 ft. by 12 ft. by 5 ft. and is lined with white tiles. A flight of marble steps leads down to it.

THE PALESTINE EXPLORATION FUND

IT is a striking fact that, while all the work of the excavator is done in the scientific spirit, the constant result is the confirmation of the Scriptures. Nothing of this nature has happened more significantly than the discovery of the great stele of Hammurabi, showing him at the head of his code of laws. A cast of the stele has been placed in the Harvard Semitic Museum and its efficient director, Professor D. G. Lyon, has been giving lectures on it, his specialty being Assyriology. Here is the Amraphel of Genesis XIV, giving his own history and a full, indirect description of the civilization of his time, which is about 2250 B. C.

In Genesis XIV Amraphel is named at the head of four kings who led the divisions of a great army. Amraphel is spoken of as "King of Shinar," by which name the Hebrews knew Babylonia. He and his allies came because of the refusal of the people of the lower Jordan valley to pay tribute any longer, after having done so for 12 years. The 13th year they sent no presents. The next year came this strong force and conducted a skillful campaign by first fighting successful battles on the east, south and west of the rebellious cities, and then coming to them at the last. The battle was soon decided in favor of the Babylonians, and they started off carrying the people into exile, as they did afterwards with the Jews, probably intending to send colonies of their own people to occupy the fertile valley. But Abraham frustrated their plans and the cities soon fell by their own wickedness rather than by foreign foes.

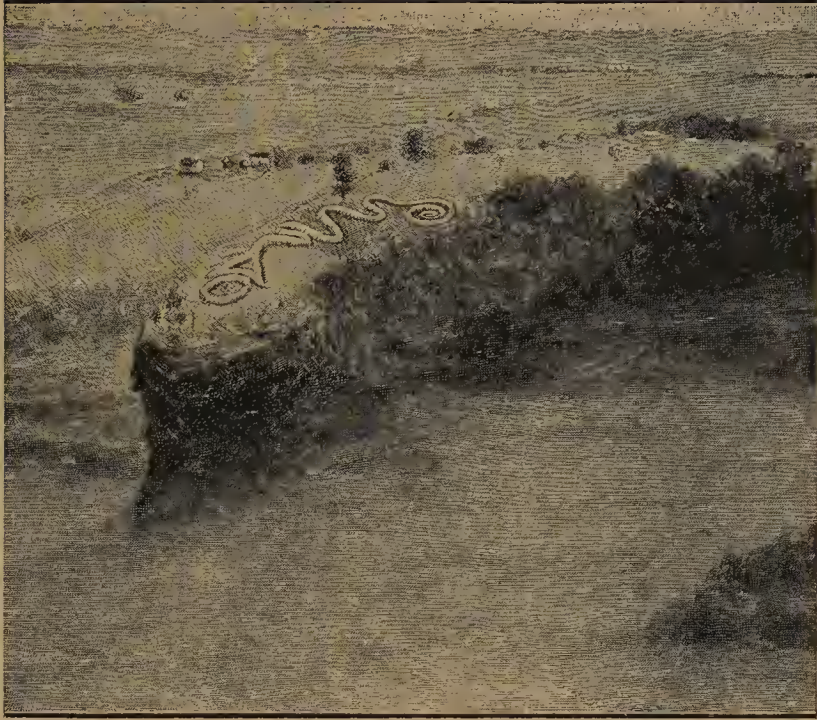
It was formerly thought that these cities lay at the southern end of the Dead Sea, but they are now thought of as located at the northern end, near the little city Zoar which has been identified. Certain mounds described by Dr. Selah Merrill in his volume *East of the Jordan* probably represent these cities, but the difficulty of excavation in so hot a district will be very great.

THEODORE F. WRIGHT, *Hon. U. S. Sec'y.*

42 QUINCY STREET, CAMBRIDGE, MASS.



ROMANO-BRITISH RELICS IN WINCHESTER:—The region in and around Winchester is rich in Romano-British relics. As many of these relics have to do with burials and Roman law forbade interment within towns or cities, it is probable that this was a cemetery. Cinerary and votive urns have been found at various times. In December last two elegant vases were dug up near a railway arch. One, in perfect condition, is in red Salopian ware. The other was broken when found, but is capable of being mended. It is a one-handed vessel in what is apparently New Forest ware.



THE SERPENT MOUND

THE SERPENT MOUND, ADAMS COUNTY, OHIO *

AMONG all the monuments left by the Mound-Builders, this one of the serpent is the most curious and interesting. It is situated in Bratton Township, Adams County, Ohio, in a very picturesque and pleasing part of the county. In the upper part of the county a small stream called Brush Creek takes its rise. It is formed by the confluence of three smaller streams,—East, West, and Middle Fork. Their place of meeting can easily be seen from the mound. Along the east side of the creek thus formed, and running parallel with it, is an elevation of land, the summit of which forms a plateau. This plain, rising higher and higher, suddenly terminates at its northern end in a sharp bluff with almost perpendicular sides, averaging 100 ft. in height, whose base is washed by the waters of the creek. This bluff overlooks a sharp, steep ravine, which forms the bed of another small stream. Thus, it will be seen, the bluff presents a ridge or promontory of high land which commands the attention of any one on the levels below. It is upon the crest of this ridge that the graceful and immense undulations of the serpent are laid. On account of the slope of the ridge he is so placed, with a good background, that every part of the immense figure can be seen to the most perfect advantage.

**The Serpent Mound, Adams County, Ohio. Mystery of the Mound and History of the Serpent. Various Theories of the Effigy Mounds and the Mound-Builders.* By E. O. RANDALL, LL.M., Secretary of the Ohio State Archæological and Historical Society; Reporter of the Ohio Supreme Court. Columbus, 1905. The Ohio State Archæological and Historical Society. 12 mo. Pp. 125.

Here was a superb inclined stage, elevated before a spacious hill-surrounded pit, miles in circumference and affording ample accommodations for audiences of untold numbers. The serpent, beginning with his tip end, starts in a triple coil of the tail on the most marked elevation of the ridge and extends along down the lowering crest in beautiful folds, curving gracefully to right and left and swerving deftly over a depression in the center of his path and winding in easy and natural convolutions down the narrowing ledge with head and neck stretched out serpent-like and pointed to the west. The head is apparently turned upon its right side with the great mouth wide open, the extremities of the jaws, the upper or northern lying one, being the longer, united by a concave bank immediately in front of which is a large oval or egg-shaped hollow 86 ft. long and 30 ft. wide at its greatest inside transverse, formed by the artificial embankment from 2 to 3 ft. high and about 20 ft. wide at its base. The oval is therefore 120 ft. long, outside measurement, and 60 ft. in its greatest width. The head of the serpent across the point of union of the jaws is 30 ft. wide, the jaws and connecting crescent 5 ft. high. The entire length of the serpent, following the con-

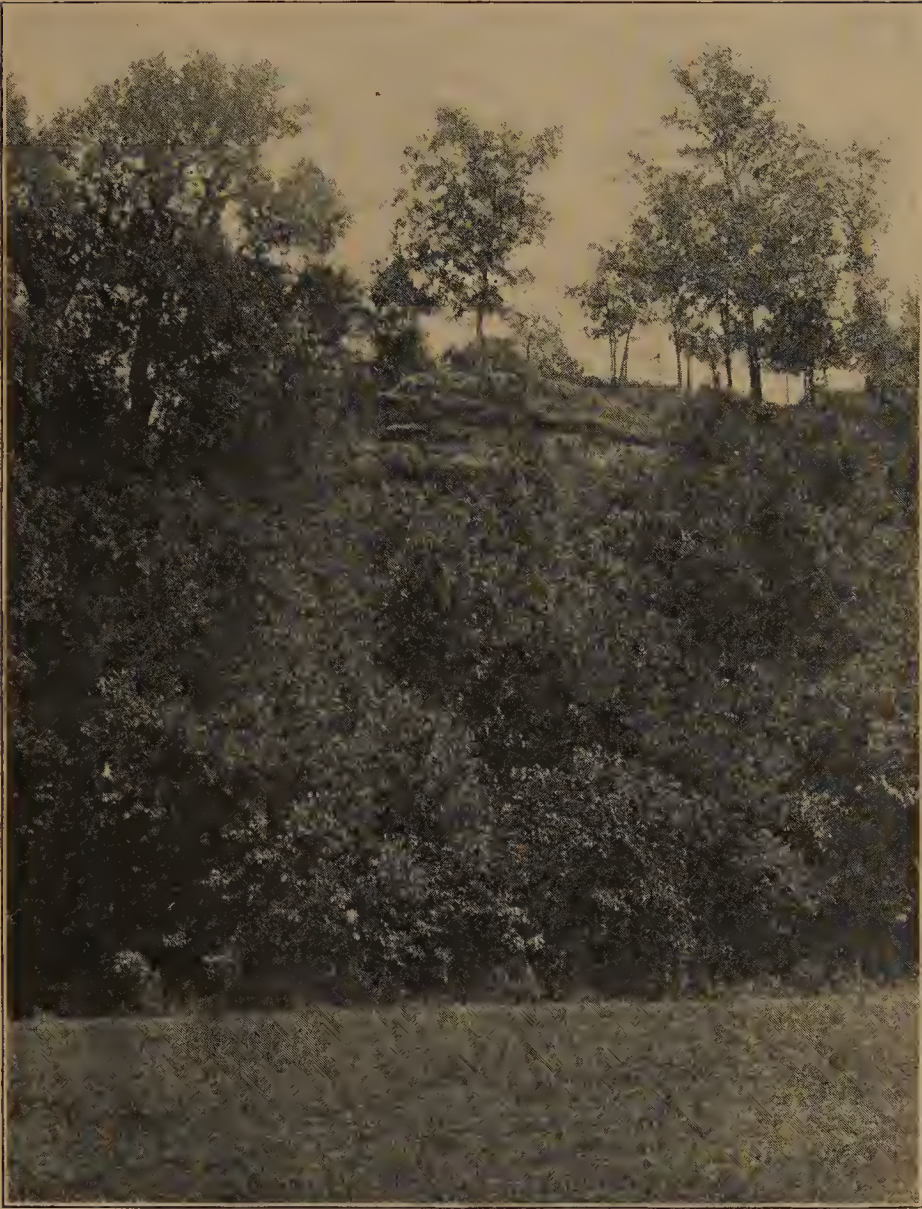


THE SERPENT MOUND

volutions, is 1335 ft. Its width at the largest portion of the body is 20 ft. At the tail the width is no more than 4 or 5 ft. Here the height is from 3 to 4 ft., which increases toward the center of the body to a height of 5 or 6 ft. The air line distance from the north side oval and head to the southern coil of the tail is about 500 ft. The total length of the entire work, if extended in full length from the west end of the oval to the tip of the tail, is 1415 ft. [pp. 10-13].

This wonderful effigy was first discovered in 1845 by Squier and Davis at the time of their extensive studies of the ancient mounds and earthworks in the Mississippi valley. They were wonderfully impressed by it, as every one is who sees it, and their report forms the first contribution to the Smithsonian Institute.

In 1883 Prof. Frederick W. Putnam, of the Peabody Museum, became much interested in the mound. It was situated on ground owned at that time by a Mr. Lovett, and was in a deplorable condition. Prof. Putnam returned to Boston and with enthusiasm pro-



BLUFF ON WHICH THE SERPENT'S HEAD LIES AS SEEN
FROM BELOW

ceeded to arouse the people there to an active interest in preserving it. He secured a contract with the owner that it should not be disturbed for a year, and also obtained an option on 60 or 70 acres surrounding the mound. In 1885 he secured the attention and interest of Miss Alice Fletcher, a wealthy lady interested in such subjects. Through Miss Fletcher's efforts and those of Mr. Francis Parkman and Mr. Martin Brimmer, a sum of nearly \$6,000 was secured, with which Prof. Putnam purchased the property, the title being placed in the names of the trustees of the Peabody Museum, Cambridge. These trustees were Prof. Asa Gray, Dr. Henry Wheatland, Hon. Theodore Lyman, Hon. George F. Hoar, Francis C. Lowell, and Prof. F. W. Putnam.

Following this purchase Prof. Putnam with a corps of assistants spent the summers of 3 years in exploring the immediate neighborhood of the mound, finding a village and cemetery site near by. They also laid out the grounds they had purchased as a park or place of resort for students and visitors. All this was expensive work for which additional money was raised through the efforts of Prof. Putnam. Again through Prof. Putnam's efforts, with the assistance of Mr. M. C. Reed of Hudson, the passage of an act by the legislature of Ohio was secured which exempted the property from taxation, this being the first law which was passed by a legislative body for the protection of archæological remains in the United States. In 1894 Mr. E. O. Randall, Secretary of the Ohio State Archæological and Historical Society, called Prof. Putnam's attention to the fact that the mound was not receiving sufficient attention and proposed that the Ohio Society should assume the care of it. Whereupon Prof. Putnam during his stay at Columbus at the time of the meeting of the American Association for the Advancement of Science (in August, 1899) stated to Prof. W. C. Mills, curator of the Ohio Society, that if the society would accept, repair, and suitably preserve it, he would advise the Trustees of the Peabody Museum to transfer the property as proposed.

In 1900 the secretary of the Society presented the matter to the Joint Finance Committee of the 74th Assembly. That committee recommended to the legislature an appropriation for the repair and care of the Serpent Mound, which appropriation was afterwards made. The Trustees of the Peabody Museum having meanwhile made over the title of the mound and park to the President and Fellows of Harvard College, Professor Putnam brought the matter before the officers of the College, who, after considering it, voted to transfer the property to the Ohio State Archæological and Historical Society. This was accomplished on the 8th of October, 1900. The deed reads as follows:

This conveyance is upon the condition that the grantee corporation shall provide for the perpetual care of the Serpent Mound, and upon the further condition that the grantee corporation shall keep the Serpent Mound Park as a free public park forever, and the non-fulfillment or breach of said condition or either of them, shall work as a forfeiture of the estate hereby conveyed, and revert the same in the grantor and its successors. And upon the further conditions that the grantee Society shall place and maintain in the park a suitable monument or tablet upon which shall be inscribed the record of the preservation of the Serpent Mound and the transfer of the property to the State Society. [p. 109].

From all this it is plain that it is due to the indefatigable and enthusiastic work of Professor Putnam that the mound has been preserved at all, and is now in the careful hands of the Ohio Society. The Society has faithfully carried out its part of the contract, and has built a good house near by for the care-taker. This gentleman, Mr. Daniel Wallace, is most careful and efficient.



SERPENT MOUND LOOKING TOWARDS THE HEAD

The Society has also erected upon the mound, just south of the serpent, a beautiful marble monument commemorative of the discovery of the mound by Squier and Davis, its subsequent restoration by Professor Putnam, and its transfer by Harvard University to the Ohio State Archæological and Historical Society.

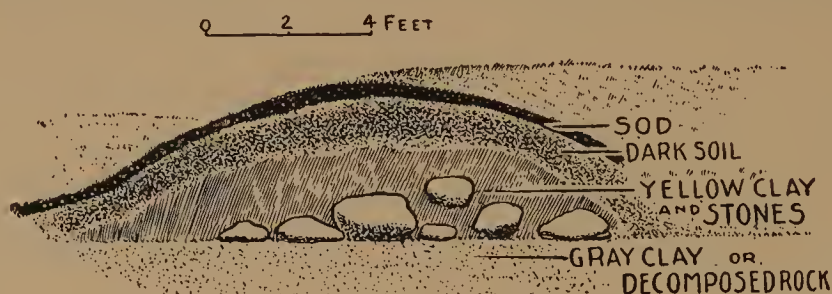
In treating of this mound, Squier and Davis speak of the evidence of serpent worship found among the ancient Celts, mentioning the great temple at Abury, England, which they say is "in many respects the most imposing ancient monument in the British Isles." This raises a most interesting question as to whether the people who have erected the Serpent Mound were of the same stock as those who built the monuments in England. If so, must not the configuration of the land in the northern hemisphere have been different from that of to-day, or how did they reach this country? The idea that they might have been the same people is somewhat borne out by the fact that remains have been found further north in America; as, for instance, the monument found at Mizang's Point, near the Mouth of Indian River, not far from Toronto. This mound is called Otonabee Serpent Mound because it is located in Otonabee township. Prof. David Boyle, Curator of the Archæological Museum at Toronto, thus describes this mound:

The situation is one of the most commanding on the shore, the land rising with a sharp acclivity to a height of not less than 70 or 80 ft. from the water. On the very crest of this point lies an embankment nearly 200 ft. in length, in a generally easterly and westerly direction, one end pointing

a few degrees north of east and in line with an oval mound 23 ft. distant, the longer axis of which measures 50 ft., and the shorter axis 37 ft.

A cut made into the mound by Professor Boyle disclosed two human skeletons in a sitting position. Besides these were found a skeleton and some of the larger bones of the arms and legs; also, at another point, another skull, some dog or wolf teeth, the jaw of some small quadruped some pieces of mussel shells and charcoal, and also a human skeleton, which was lying on its right side. Professor Boyle remarks something singular in the fact that, unlike most of the others found, the head of this effigy points in an easterly direction. It seems strange, but in both cases the idea of the egg is reproduced in connection with the serpent. The Ojibways have seemed to hold traces of such ideas, and that leads to the question, if all these structures might be referred to some ancient Algonquin tribe.

In Wisconsin there are several serpent effigies, at Mayville, Green Lake, Madison, Potosi, and in some other places, and in each case the animal corresponds to the shape of the land on which it was placed. "A Serpent effigy examined by Dr. Peet in Adams



SECTION THROUGH THE SERPENT MOUND

County, Illinois, also answers to the usual conformity of the site." "In connection with nearly every one of these serpent mounds, evidences, more or less clear, and well preserved, exist of altar mounds, sometimes constructed of earth, more often of stones."

Dr. Daniel Wilson, a most learned authority on archæology, speaks of this mound in Adams County as being unique in the New World.

Prof. James Ferguson, another English authority, does not seem at all convinced that it represents an object of worship; but rather to his mind it represents action. What this action is intended to represent, however, he does not venture to say. Prof. Ferguson suggests that it is not improbable that the same people who built the tumuli on the Siberian Steppes may have crossed the quiet waters of the upper Pacific and from there gradually reached Wisconsin and Ohio.

Prof. J. G. R. Forlong, of London, England, in two octavo volumes (*Rivers of Life; or, Sources and Streams of the Faith of Men in all Lands*) has made perhaps the most exhaustive examination of



SERPENT MOUND LOOKING TOWARDS THE TAIL

the origin of various forms of faith and worship ever made by one student. He claims that "Tree worship was the first form of nature worship leading directly to the worship of other objects of inanimate nature, the rocks, the bushes, and even sticks and inert objects." He further says, "The second great deity, . . . is one still most prominent—the *anguis in herba* or mysterious 'stranger in the grass,' who overcame with honied words the fabled mother of us all, and who to the astonished gaze of the primitive race, overcame by god-like power, man, as well as the strongest beast of the field. That as a mere reptile he was 'subtler' as the story says, than every other creature, has not since appeared, but his subtle mode of approach, his daring and upright dash, was pictured as god-like, and in nearly all eastern countries he is still not only feared but worshiped as the 'God of our Fathers,' and the symbol of desire and creative energy" (p. 37). Forlong says further:

He [the serpent] is the special Phallic symbol which veils the actual God, and therefore do we find him the constant early attendant upon Priapus or the Lingam, which I regard as the second religion of the world. . . . It [Phallic faith] enters also closely into union with all faiths to the present hour. . . . We find him in the Vishnas, the Hindoos, and the tales of Vedia Avatars. He is God in eternity, the many coils of the snake representing infinitiveness and eternity, especially so as represented by the Egyptians with tail in mouth. There is no mythology or ancient sculpture in which the serpent does not bear a part. . . . The universality of the serpent worship has long been acknowledged by the learned. It is called Ophiolatry. . . . It has been worshiped in the lowest strata of civilization. In Egypt we see

the serpent under a multitude of symbols and connected with all sorts of worship; also in Assyria and India. We meet him in the wilderness of Sinai, the groves of Epidaurus and in the Samothracian huts [p. 69].

Rev. John Deane, of Cambridge University, England, in a book published in 1833 "traces serpent worship through Babylonia, Assyria, Persia, Hindustan, Ceylon, China, Japan, Phœnicia, Java, Arabia, Syria, Asia, Scythia, the Pacific Islands, Egypt, Ethiopia, Abyssinia, Congo, Greece, Epirus, Thrace, Italy, Sarmatia, Scandinavia, Britain, Ireland, Gaul, Brittany, Mexico and Peru" [p. 91].

Upon this it is proper to remark that the prevalence of identical ideas among primitive peoples is one of the notable things in the world. This is strikingly shown as well in the drawings and conventional patterns woven by simple peoples who have had no training from outside, certainly along these lines; as, for instance, the beautiful conventional figures used by the Esquimaux in the ornamentation of their clothes. The same thing is shown by the Indian bead work, basket weaving, and in Navajo blanket weaving, also by the Philippine mat weaving. If these intricate patterns are a natural expression of an innate love of color and form, why not similar ideas in forms of worship? It would seem to be another argument for the common brotherhood of man. This questioning of primitive man as to the mystery of life, and as to its origin, may well have expressed itself in the symbol of the egg—and the serpent—the former symbolizing its origin, and the latter, on account of its skin-shedding, being suggestive of perpetuity.



STONE SERPENT OF LOCH NELL

An account is given of a serpent in Scotland which was described by Miss Gordon Cumming in *Good Words* for March, 1872, and the poem by Prof. Blackie which accompanied the description by this lady.

Why lies this mighty serpent here,
Let him who knoweth tell—
With its head to the land and its huge tail near
The shore of the fair Loch Nell?

Why lies it here—not here alone,
But far to East and West
The wonder-working snake is known,
A mighty god confessed.

Where Ganga scoops his sacred bed,
 And rolls his blissful flood,
 Above Trimurti's threefold head
 The serpent swells his hood.

And where the procreant might of Nile
 Impregnated the seedful rood,
 Enshrined with cat and crocodile
 The holy serpent stood.

And when o'er Tiber's yellow foam
 The hot sirocca blew,
 And smote the languid sons of Rome
 With fever's yellow hue,

Then forth from Esculpius's shrine
 The pontiff's arm revealed,
 In folded coils, the snake divine,
 And all the sick were healed.

And Wisest Greece the virtue knew
 Of the bright and scaly twine,
 When winged snakes the chariot drew
 From Dame Demeter's shrine.

And Maenad maids, with festive sound,
 Did keep the night awake,
 When with free feet they beat the ground,
 And hymned the Bacchic snake.

And west, far west, beyond the seas,
 Beyond Tezcuco's lake,
 In lands where gold grows thick as peas,
 Was known this holy snake.

* * * * *

And here the mighty god was known
 In Europe's early morn,
 In view of Cruachan's triple cone,
 Before John Bull was born.

And here the serpent lies in pride
 His hoary tale to tell,
 And rears his mighty head beside
 The shores of fair Loch Nell [pp. 123-125].

Much could be written as to the various theories held by different people, but a very good idea has been given by Mr. Randall of the most commonly accepted theory by the persons who have studied the subject carefully. Altogether this little book is the most

authoritative treatise upon the Serpent Mound of Ohio which we have seen, and we can confidently recommend it to the circle of readers of the RECORDS OF THE PAST.



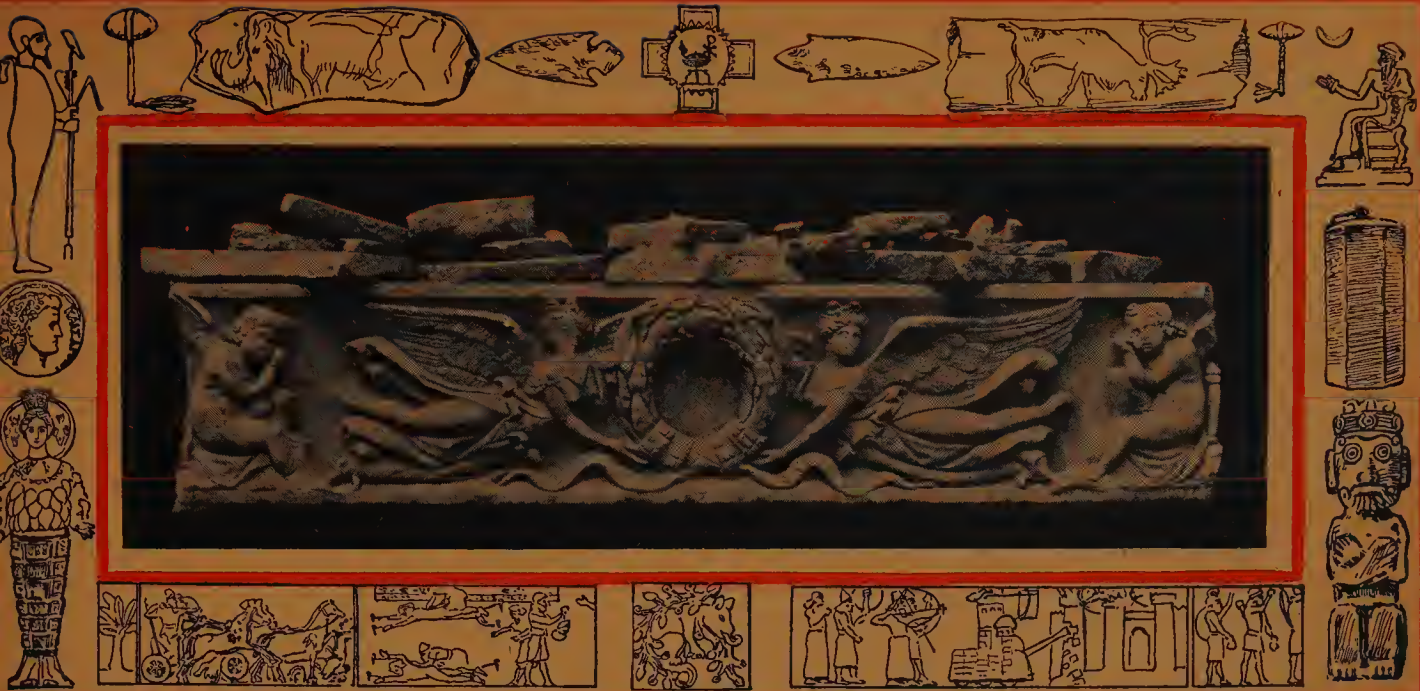
OTONABEE SERPENT MOUND, CANADA

EDITORIAL NOTES

EARTHWORKS ON WHITECASTLE HILL, SCOTLAND:—This group of apparent earthworks consists of 5 separate works in two divisions, about 40 ft. apart. In the first the main fort is oval, 270 by 250 ft. surrounded by a rampart and ditch. An oblong outwork 105 by 80 ft. enclosed within two ramparts with an intervening trench is close by. The curvilinear works were evidently built for defence. The rectilinear works, on the other hand, appear to be indefensible but their purpose is not known.

SARCOPHAGUS FOUND IN ALEXANDRIA:—A tomb cut out of solid rock was unearthed by workmen while quarrying west of the town at the foot of Om-el Kubebeh. A flight of 7 steps from an entrance court 20 ft. sq. leads up to it. The interior is painted and numerous medallions, much defaced, however, are within. The sarcophagus, flanked by two large stone pillars, lies in the southwest corner of the tomb.

THE PRESERVATION OF ANTIQUITIES IN AFGHANISTAN:—At this time when we are struggling to secure protection for the antiquities of our country both in the National and State Legislatures, we must turn to distant Afghanistan to learn wisdom. While we are unable to get legislation, except by indirect methods, for the preservation of our antiquities the Amir of Afghanistan has issued an order for the preservation of the ancient monuments and buildings in his country. Furthermore he makes the Governors of the provinces responsible for the faithful guarding of these archaeological ruins and remains. It seems a pity that with all our boasted high civilization we should allow a country, which most of us consider as semi-barbarous, to surpass us in the recognition of the value of its archaeological treasures.



RECORDS OF THE PAST

VOLUME V

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PART V



PROF. G. FREDERICK WRIGHT,
D. D., LL. D., Editor



MR. FREDERICK BENNETT WRIGHT,
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MAY 1906

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GENERAL VIEW OF THE ROMAN FORUM

RECORDS ^{OF} THE PAST

VOL. V



PART V

MAY, 1906



SANCTA MARIA ANTIQUA

FIVE years have witnessed great changes in the Roman Forum, changes which mean that this historic spot is continually approaching more and more closely the form which it had in the days of Julius Cæsar. Not many years ago it was filled with rubbish and earth and was as its name signified a *campo vaccino* or cow pasture. Then the excavators came, cleared a small space and, ceasing their labors, left a quadrangle with a few pieces of the grand old temples to represent the Roman Forum. Within the past ten years a new and more skillful body of excavators has broadened the area. They have preëmpted streets, turning traffic and trolleys into other paths, they have taken possession of churches and monasteries which, like the spider crab, had entered into the shell of some old temple or of some palace of imperial days.

Visitors of a few years ago will remember the Church of Santa Maria Liberatrice which stood on the south side of the Forum close to the Palatine Hill. In front was the roadway along the slope of the hill and in the rear were orange and lemon trees in a garden belonging to an adjoining monastery. This scene has been changed and now between the temple of Castor and the Palatine are gaunt and bare ruins, for an old church of the VIII century has slowly emerged from the earth after a burial of many centuries and with it there have also come to light traces of a building which belonged to the group of palaces crowning the Palatine and nestling at its base.

When Cicero stood on this hill where he had his home, he looked down on private houses which occupied the corner of the two streets Nova Via and Vicus Tuscus. Here the Emperor Tiberius when encouraging the deification of Augustus built a temple to his adoptive father. This was directly on the corner and in the space between this temple and the Palatine, the eccentric Caligula built a palace which formed the link between the structures on the summit and the temple of Augustus. Over the roofs of these buildings, the same mad emperor built a bridge linking the Capitoline to the Palatine. These buildings were destroyed in the fire of Nero, and when Domitian restored them he designed the new structure, between the temple of Augustus and the Palatine, as a library and dedicated it to his patron divinity Minerva. This served also as a sort of war chancery, for on its walls were set bronze tablets on which were engraved the names of soldiers who, having given good service, were granted privileges of citizenship and a recognized legal marriage. When the Christians metamorphosed all large buildings into churches and monasteries, they used this library as a chapel in honor of Mary the mother of Jesus. This took place probably in the VI century and in the two centuries following the chapel was enlarged so as to include the entire building, its walls were decorated with appropriate frescoes, a new pulpit or ambo was constructed, and it was given the important name of Sancta Maria.

In the IX century the imperial palaces which crowned the overhanging heights began to crumble, and threaten, by their down-fall, the church standing just below. Thereupon Pope Leo IV built Sancta Maria Nova on the ruins of the temple of Venus and Rome on the other side of the Forum. Although the old church was used many years after this time, it was gradually left to its fate and when an earthquake shook the palaces on the hill, great pieces of the ruins fell crashing down into the building and left their imprint, visible to-day, on the floor below. In the years that followed, the church was filled with rubbish until it disappeared under a mass of earth 30 ft. deep; yet, just as at Pompeii, the walls remained, and we may now readily study the plan of the temple and the church, and examine the frescoes which are still wonderfully clear and distinct.

There are sufficient remnants of the various buildings which have at different times occupied the site, to permit us to form some opinion about them all. The large entrance court of the library has niches appropriate for statues, but beneath its floor is an oblong basin which once formed a beautiful fountain for an earlier building, the palace of the days of Claudius. The court became the entrance to the church, and frescoes with Christian subjects adorn its walls. On the western side a large number of *loculi* or cavities were cut in the wall as receptacles for the bodies of saints whose names and records, so to speak, were pictured on the walls which concealed their last resting place. Adjoining this hall is the principal room of the li-



SANCTA MARIA ANTIQUA



INTERIOR OF SANCTA MARIA ANTIQUA

brary,—a quadriporticus with 4 granite columns and 4 square pillars of brick. This hall was probably open to the sky at least until the Christians took possession. Beyond the quadriporticus are 3 rooms which were primarily arranged for the library, the middle served for a reading room and those on the sides held the books. According to rules laid down by the old architect Vitruvius of the days of Augustus, the reading room faced the north and east, received the full morning light, and, being walled up toward the south, warded off the hot south wind or Sirocco. How convenient a spot for a library, near the Forum, adjoining the palaces and yet sufficiently protected from intrusion to ensure perfect quietness and cloistered retirement!

This plan was admirably adapted to the needs of the early Christians. The main hall became the body of the church where the catechumens or young converts might gather and the covered sides or porticoes served as aisles where the baptised members could assemble, each sex on its own side. The store rooms of the library served as chapels and the reading room between became the sanctuary. The walls of this old building by their frescoes tell us of the religious influences in Rome in the VIII century, for they show us popes and saints of that early time whose names, painted near their pictures, are familiar in the early church. Here are SS. Peter and Paul; SS. Quiricus and Julitta, martyrs of Tarsus in the days of Domitian; here is Theodotus, the donor of the chapel, a former military official and later of high rank in the church. He is probably the person in a votive picture, who, holding a lighted candle in either hand, is kneeling before Quiricus and Julitta. Behind his head is a square nimbus indicating that he was alive when the picture was painted. He is clothed in a blue chasuble. Quiricus holds a cross and crown and Julitta has her hand raised. Then there are pictures of saints arranged to represent the Eastern church and the church at Rome. Scenes from Old Testament history, e. g. the story of Joseph, adorn the walls toward the Palatine, but on the opposite side is a series from the New Testament. These may have been taken from illustrations on old Greek Bibles and belong to the same class as those found in the famous Joshua roll of the Vatican. One of the frescoes, remarkably clear, shows the crucifixion.* The cross secured by three wedges stands on a hillock; the head of the Saviour is adorned by a cruciform nimbus; his sleeveless garment is colored blue with yellow stripes, and reaches to his feet; Longinus with his spear is close to the cross on the right, and the soldier with the sponge on the reed is to the left. Mary, the mother of Jesus, is also to the right of the cross; she is clothed in a blue garment adorned with white fringe, and is holding her hands, covered by the robe, to her face, evidently in great sorrow. St. John is there also, clad as an apostle in a pallium of yellow over a white tunic. The two fingers of his right hand are extended as conferring the apostolic benediction, and in his left hand

* See RECORDS OF THE PAST, Vol. II, p. 241.



FRESCO IN SANCTA MARIA ANTIQUA

he holds a jewelled book. A picture showing Hezekiah on his death bed represents Isaiah the prophet conferring his blessing and addressing the king in the words of the prophecy xxxviii, 1. "Set thy house in order for thou shalt die."

These paintings are Byzantine in spirit but nevertheless they suggest in some particulars relationship with Roman art of classical times. These were Byzantine days in Rome. Everything had a



CHILD'S SARCOPHAGUS FROM SANCTA MARIA ANTIQUA



-FRESCO OF HEZEKIAH ON HIS DEATH BED

Greek tinge and Greek officials and Greek influences had their sway. Naturally, then, in this church we find Greek inscriptions, Greek costumes on every side. The very atmosphere is Byzantine for on the Palatine just above was the seat of the Byzantine government. The cavities cut in the walls of the entrance hall of the church are not the only evidence of burial in and about the building. Four sarcophagi, dated in the II, III and IV centuries, adorned with figures in relief have also been found. They were stolen in Byzantine days from some tombs outside of the city for use as coffins. One has a pagan

inscription referring to the original occupant, a Clodia Secunda who lived with her husband without complaint 7 years, 4 months and 18 hours. Another is richly adorned with wreaths and garlands, and another is a child's sarcophagus with the design of two winged figures holding a wreath and with weeping Cupids at each end. Finally, one is elaborately carved with Christian subjects, the story of Jonah and the Baptism of Christ.

From this brief sketch it will become evident that the excavations in the Roman Forum mean increased knowledge, not merely in the field of classical archæology, but in the history of Christian art and in the antiquities of the Christian period.

JAMES C. EGBERT.

COLUMBIA UNIV., NEW YORK CITY.



THE ORIGIN AND ANTIQUITY OF MAN

AS the different children of a family inherit with some variation the general physical and mental qualities of the parents, so kindred races, species, and genera, having relations to each other analogous with those of brothers and sisters of the same family, have like them received their similar qualities from the same ancestors. Though the descendant lines have diverged, and are now distinct in some respects, yet the characters which they still share together point to unity of origin. Present races and species bear to the ancestral species whence they have developed, the same relation as the branches of a tree bear to its trunk.

The processes of change, whether of progress or of regression, and sometimes extinction, are now taking place, and are modifying species and races perhaps as fast as during any former period in the history of our globe. We see allied varieties or races of plants and animals, living intermingled in the same district, or more frequently in different but adjoining regions, or sometimes quite separated geographically, which are not yet sufficiently distinct to rank as separate species, but which seem surely destined to diverge more, until their increasing difference and decreasing affinity shall give them that more distant relationship. The parent stock and the diverging branches are all the while represented by multitudes of individuals. Divergent species and races, therefore, have come into their present strongly contrasted characters from preceding ancestry which was a unity in its specific character, but which resembled any vigorous species of the present time in comprising a vast number of individuals occupying a somewhat extensive geographic area.

The Creator, working through long ages by these processes of descent with modification, which we call evolution, has developed the great races of mankind from some single older and much different

ancestral species of less intelligence. Anthropology, the science of the development of man, and of his races and tribes, agrees thus with the words of the inspired apostle Paul, in his address to the Athenians, teaching them of God who "made of one blood all nations of men to dwell on all the face of the earth."

Among all the high orders of animate nature, man is the most cosmopolitan. He dwells in every habitable part of the earth, and under every climate, from the burning heat of the tropics to the severe cold of polar regions. Only the ice-covered Antarctic continent, the similarly ice-enveloped interior of Greenland, and other barren frozen lands farther north, remain uncolonized by mankind.

But the birthplace of our species was undoubtedly somewhere in the warm regions of the eastern hemisphere, of the Old World, as we call it in distinction from the New World which Columbus gave to his royal patrons. In the rock formation of the Old World, belonging to the late geologic ages termed Tertiary, fossil remains of anthropoid apes are found, but none are known in the rocks of our western continent, either of North or South America. Not only are these fossil traces or hints of our ancient pedigree found on the opposite side of the globe, but also there several anthropoid genera survive to the present time, as the gorilla, the chimpanzee, and the orang-outang, each represented by a single species. If we call the black and the yellow and the red men our brethren, then, on a similar scale of expression, these anthropoid species are related to us somewhat like fifth or tenth cousins. They are our other nearest animal kin. The great tropical regions of the Old World, therefore, where they still live, and where their and our backwardly convergent lines of ancestry are made known, though very fragmentarily, by the testimony of the rocks, must be regarded as the source of our now cosmopolitan species.

In the very remote past, some race of the ancestral stock acquired articulate speech to express their thoughts, and this led to more and better thought. The hand, most useful servant of the brain, acquired skill beyond that of the other anthropoid races. The stick broken from a dead tree for any use, or the stone picked up as a weapon or tool, received artificial improvement. The stone-tipped javelin or spear gave to the favored race mastery in contests, and supplied food by the slaughter of game. The valuable food plants were watched, and by and by some of them were cultivated with stone hoes. Fire, the mysterious gift of nature to man's dawning intelligence, cooked his food. Thereby he grew stronger and more crafty, and gradually extended his geographic range into the colder northern and southern temperate zones. To the genial comfort of a fire for the preparation of food, for warmth in winter, he added, when cold and exposure required, the skins and furs of beasts as clothing. Wandering tribes of men were then able to brave the cold of the high northern latitudes, where, on a land belt occupying the present site of Bering Sea, and perhaps by another such land belt from the British Isles to the Faroes,

Iceland, and Greenland, the progenitors of the American race came into this western hemisphere.

On this continent, glacialists find evidences of man's presence only during the late and closing stages of the Ice age; but the Old World has good proofs that man was there, making and using stone implements, contemporaneous with the oncoming of that age, when an ice-sheet enveloped the northern half of continental Europe and the greater part of the British Isles, reaching south to the upper courses of the Don and the Dneiper, to the lower Rhine, and to the Thames. Any estimate of the antiquity of man, therefore, whether in the western or the eastern hemisphere, must depend on the measures or estimates obtained by geologists for the duration of the Post-glacial period, and of the much longer Glacial period.

For the time since the end of the Ice age, apparently nearly alike in America and Europe, approximate determinations have been given by N. H. Winchell, G. F. Wright, the present writer, and many other glacialists, as summarized by Hansen, which range from 5,000 to 12,000 years. Their average, or about 8,000 years, may be confidently accepted as near the truth.

It is more difficult to secure a probable estimate, on which glacialists will so well agree, for the length of the Glacial period, which is found on both continents to have been very complex and long, as measured by years, though short in comparison with preceding geologic periods. On both these vast land areas it involved nearly the same sequence in the stages of growth and decline of the ice-sheets, in their first accumulation, great recessions and readvances, and their final melting away. From the beginning to the end of the glaciation are counted several stages or epochs of growth and wane, the principal times of ice advance and deposition of drift sheets and moraines in North America being named the sub-Aftonian, Kansan, Illinoian, Iowan, and Wisconsin stages.

Some glacialists have estimated the antiquity of the Kansan stage of glaciation, when the ice-sheet extended farthest on the west side of the Mississippi, as from 15 to 50 times as long as the end of the Ice age, that is, between 100,000 and 400,000 years ago, while the earlier stages and the beginning of the ice accumulation were still older. Others, however, recognizing the necessary limitations of the whole time of life on the earth, from the very ancient Algonkian period until now, considered by astronomers and physicists to be perhaps only about 20,000,000 years, and almost certainly no more than 100,000,000 or 200,000,000 years, and comparing the somewhat well known ratios of the geologic eras and periods, have concluded that the portion of time belonging to the relatively very short Glacial period, in all its stages cannot exceed 100,000 years.

Such a measure of this period would place its Kansan stage some 50,000 to 25,000 years before its end; and the Iowan stage, to which the fossil man of Lansing, Kansas, is referred, would be only 12,000 to 15,000 years ago. These estimates seem to me compatible with the

characters of the Kansan and Iowan drift formations. Instead of the great antiquity attributed by some to the Kansan drift on account of its plentiful pebbles of decayed rock, supposed to have rotted since the Ice age, I would refer these to derivation from stream gravels that had been affected during the long preceding period by subaërial decay, or to glacial erosion from preglacially weathered and decaying rock surfaces. The pebbles or eroded rock fragments would hold their form during the glacial erosion, transportation, and deposition, by being then frozen. Again, the patchy occurrence of the oldest till deposits in some places near the extreme boundary of glaciation, often found on heights, but absent from lower ground, I would not refer to subsequent erosion, implying a great lapse of time, but to originally unequal and patchy deposition, analogous with the tendency of the ice-sheet in its Wisconsin stages to add till to the heights of growing drumlins, in localities of their abundant development, while sometimes leaving little till or none on intervening low tracts of the bedrock. With these explanations I think we may accept a moderate estimate of the age of the Kansan drift, consistent with a duration of the entire Glacial period as only about 100,000 years, and with a close relationship of the Iowan and Wisconsin stages, both belonging to the Champ-lain epoch or time of land depression terminating the Ice age.

Man lived in the region of the Somme valley, France, before the great elevation of northern lands which caused them to be mantled with snow and ice. From the Old World, the original home of our species, mankind migrated to America at some undetermined time before or during the Ice age. If the migration was contemporaneous with the glaciation of the northern half of our continent, the passage, whether from northeastern Asia or northwestern Europe, or from both, took place along the shores of the sea, where the vast ice-sheet was bordered by a strip of coastal land like that now fringing the Greenland ice-sheet, but which has since been deeply submerged.

That America was peopled very long ago is ascertained geologically by traces of man contemporaneous with the closing scenes of the Ice age in Delaware, New Jersey, New York, Ohio, Indiana, Kansas, Iowa, Minnesota, and Manitoba. The latest and most noteworthy proof of this was the discovery 4 years ago of a human skeleton under loess of the Iowan stage of glaciation near Lansing, Kansas.*

Ethnology likewise declares, as voiced by Powell in a profoundly philosophic paper in *The Forum* of February, 1898, that man came to America very long ago, and that he has since developed the many and diverse languages, handicrafts, legends and myths, and the physical peculiarities, of the American race. How long ago that migration took place, permitting the racial development of these people, called the American Indians, to begin, we cannot tell definitely, or even approximately, in terms of years. We can only say that before our continental ice-sheet passed its Iowan stages, the Ameri-

* See RECORDS OF THE PAST, Vol. I, pp. 272-275, and Vol. II, pp. 119-124.

can or red race appears, as shown by the Lansing skeleton, to have progressed far in its differentiation from the white, yellow, and black races.

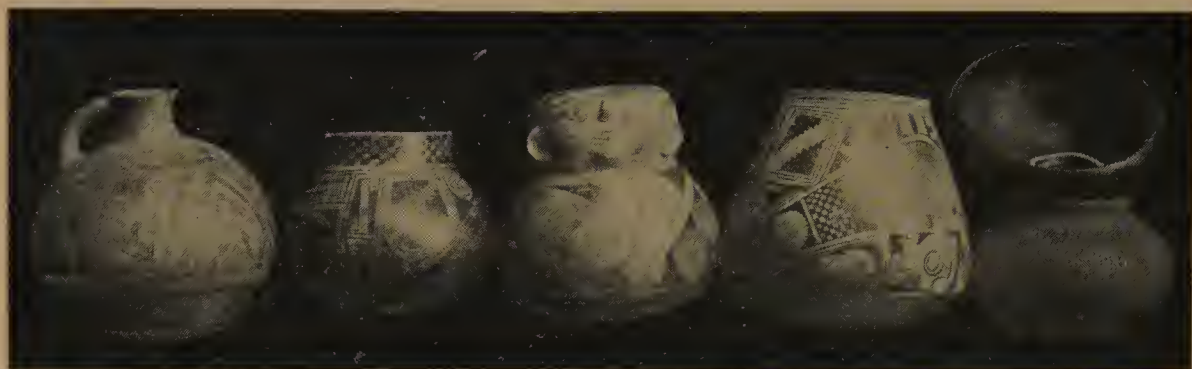
Development of the physical and mental characteristics of the American race doubtless went forward in companionship with the development of their industries, tribal organization, and advancement toward civilization. All these changes, from a very low condition of savagery to semi-civilization in some districts, great diversity of tribal and national life, high skill in various handicrafts, and general contrasts with the races of the Old World, took place, as I believe, after the aboriginal migration to America. This development was probably almost fully synchronous with the differentiation of the 3 great races of mankind on the other side of the globe; and their establishment was complete long before the pyramids of Egypt were built, and, indeed, long before the Aryan invaders of western Europe, in the later part of the Ice age, brought the Neolithic arts, cultivated plants, domestic animals, and the Indo-European languages.

The beginning of the human epoch, when our species gained such development of body and mind as to deserve its generic and specific name, *Homo-sapiens*, we cannot well designate more closely than to say that it very far antedated the close of the Ice age. It was undoubtedly several times more ancient than the western Aryan migrations, which, by their relations to the waning European ice-sheet, appear to have occurred some 5,000 to 10,000 years ago. According to my studies as a glacialist, it seems to me that Flinders Petrie has given as satisfactory estimates as can be made with our present knowledge, in his suggestions assigning 100,000 years as the probable duration since Paleolithic man appeared in the Somme valley, and 10,000 years since Neolithic man came into western Europe. Eolithic man, known by his very rude stone implements in stream deposits, which are preserved on high plateaus in southern England, belonged doubtless to a time considerably earlier than 100,000 years ago, so that we may perhaps allot twice that period for the existence of mankind and the development of the 4 principal races of white, black, yellow, and red men.

But, however long ago, as 200,000 years, we may estimate the duration of the human species, geology affirms that life in its lower forms began upon our globe in an antiquity probably 500 or 1,000 times more remote, and the beginning of the existence of the earth and of the solar system was again vastly more ancient. The duration of the period of written history, or even of mankind, beginning many thousands of years earlier, seems like the span of one's hand in comparison with geologic time, which was in the mind of the seer writing of the Creator's work, "Of old hast Thou laid the foundation of the earth."

WARREN UPHAM.

Minnesota Historical Society,
St. Paul, Minn.



PREHISTORIC POTTERY FROM RUINS IN CASAS GRANDES VALLEY

CASAS GRANDIAN OUTPOSTS

THE size of the prehistoric population of the Casas Grandes and numerous adjacent valleys of Northern Mexico is ever a source of wonder even to the present rude inhabitants of that district. Everywhere along the courses of the Casas Grandes, San Miguel and Piedras Verdes rivers are signs of the handiwork of man in ages past—ruins of large communal dwellings, of irrigation ditches, acequias, watch-towers, temples, fortifications, smelting works, trincheras and further in the mountains, of cliff-dwellings. Potsherds and broken metates strew many a low-lying mound from the large central mass to the remote outposts in the mountains,—for like the early Phœnecians, the political and commercial arms of these people were long,—while the interior of the mounds reveal ruined walls of adobe, coated with a white plaster or wash enclosing rooms of sizes varying from small store-rooms to spaces as large as courts—the average dimensions, however, being about 12 ft. long by 8 ft. wide. Pottery that ranks among the first of the aboriginal pottery of the Western Hemisphere is taken from these ruins; also objects of beaten copper and well-carved stone.

The culture symbols from the large remains, and the nearby smaller ones of the Casas Grandes valleys, are of an especially high order,—as the buildings themselves surpass the others—the main ruin being 850 ft. long by 250 ft. wide, and was probably of several stories in height, sheltering from 2,000 to 3,000 persons. However, it is not with this great group that the present article has to deal, nor yet with the cliff-dwellings in the mountains, for both of these have before been described, but with the remains that lie half way between these extremes, geographically, as well as in the degree of importance, and probably of civilization—those rugged outposts pushed far into the mountain



VIEW FROM CASAS GRANDIAN OUTPOST

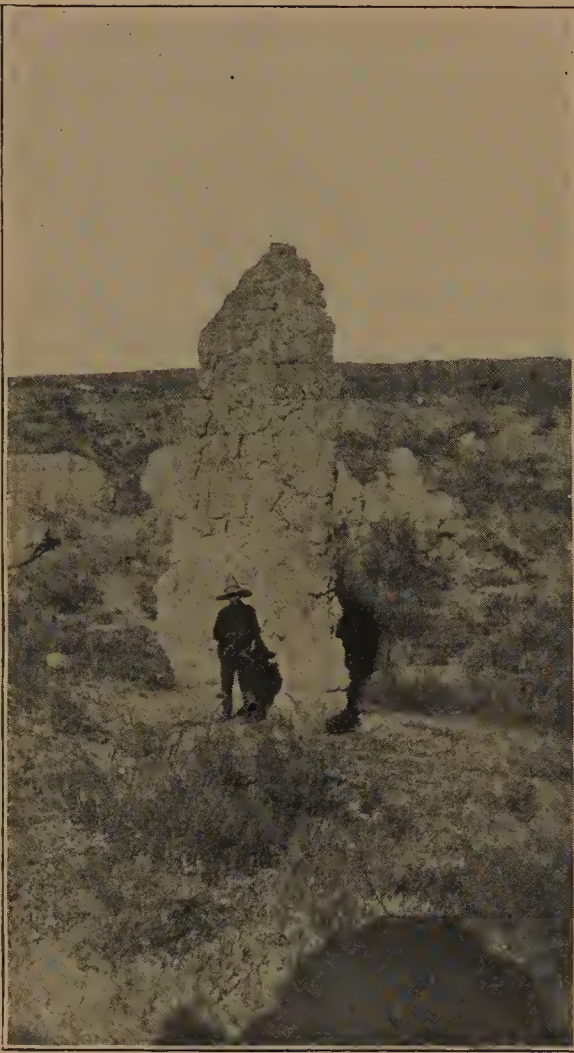
passes to hold in check the wild tribes of the interior, or to provide for the mining and smelting of the metal that was prized so highly, and of which the best ornaments and weapons were constructed—copper. For although it is generally supposed to the contrary, copper played an important part in the everyday life of the early inhabitants of this section, and was manufactured with much skill into arrow-heads, ornaments and ceremonial objects, though these people just in the



TRINCHERA BEYOND A CASAS GRANDIAN OUTPOST

dawn of the age of copper had not acquired the art of the Egyptians and Peruvians in reducing it to a hardness and temper comparable with steel.

The outposts were nearly always of small size, occupied commanding positions, and were heavily fortified, differing from the village ruins of the plains in that not only were the houses themselves fortresses, as in the former case also, but in addition their immediate



RUINS OF THE CASAS GRANDES

approaches were ably guarded by walls and parapets of stone. The more isolated their position of greater importance the defenses seemed to become. Frequently rude smelting works were located nearby, but the situation of the mine usually remains decidedly problematical. In one case, however, of which the writer has knowledge, the ore was carried from the original deposit over a mountain and down the other side before it was smelted, though whether this state of affairs was brought about by an inadequate water supply at the mines, a delicate disinclination to permanently beard a somewhat more powerful and less considerate neighbor, or misdirected zeal for physical culture, it is impossible to say. Perhaps they were willing to despoil where they did not care to dwell—from motives of policy or otherwise,—for not unlike the ignots of gold and silver hurled at the forces of

Jenghis Khan at the siege of Peking, the metal which they so eagerly sought and laboriously smelted, seemed to bring its disadvantages. Be that as it may, it is probably some such idiosyncrasy in their mining economy that accounts for the almost total impossibility of locating the ancient workings by means of their ruined smelters, and the consequent waning interests of the prospectors of this section in the pursuit of archæology.

One of the most typical and picturesquely located of these outposts is situated towards the headwaters of the Piedras Verdes river, and about 14 to 18 miles below Cave Valley, the ruins of which have been described in a former paper.*

The village, originally consisting of one large communal dwelling, or a collection of 8 to 10 smaller houses, covered about an acre of ground on the summit of a cliff overlooking the river, and commanding the pass, which opens from the valley beyond into the valleys and passes which lead to the remains in the lowlands. A more beautiful

* See RECORDS OF THE PAST, Vol. IV, pp. 355-361.



OUTPOST SHOWING INDICATIONS OF RUINED WALLS

spot or one of greater strategic value it would have been difficult to discover. Placed high at one end of the valley, which the mountains of vari-colored rock and soil almost encircle in great sweeping lines, it juts boldly forth with its back to the pass, bounded on one side by the river, on the front by a rocky cliff that descends sheer to a pool formed by the backwater from the stream, and on the other side by the gentle rising slope of the mountain.



VILLAGE SITE AND CLIFF SHOWING CAVES FORMERLY INHABITED

That the inhabitants were ever on the lookout for unwelcome visitors a superficial glance alone will reveal, for of whatever other nature this community might have partaken, it was essentially military. Series of parapets in ranged zigzag lines along the approach to the plateau from the river side caused all who approached from that quarter to pass and repass the same point several times before the



RUINS OF CASAS GRANDES



RUINS NEAR A CASAS GRANDIAN OUTPOST

summit was reached, and to keep continually below ever new defenses, while the defenders could with ease fall back from one line to another. It is highly probable that this village united on a miniature scale the warlike and peaceful in the same strong bond as of old did Ecbatana in Media by growing crops between its walls.

A heavy and elaborate stone fortification about 200 ft. up the mountain side protected the village in that section. In addition to this there were probably other defensive works, of which Time has left but few traces, and the houses themselves seem to have been constructed on the pueblo plan, with few if any outer doors on the lower floor.

Between the fort and the village, and a little to the left of the former, lie the remains of a primitive smelter, consisting of two concentric circles of large stones; on the lower side were found portions of a pile of slag, but the mine, as usual, was not to be seen.

Of the village itself little is left but a series of large mounds, though in one or two sections remains of walls are visible upon the surface, stone having largely been used in the construction of these dwellings. Toward the river side a large depression about 3 ft. deep seems to have been formed by the falling walls which surrounded it—the probability being that it was originally a court. A crude pictograph pecked on a nearby cliff by means of a hard stone represents the head and body of a human being, in which the ribs are clearly delineated, with the crescent moon over the right shoulder, and the sun in the lower left-hand corner.

The metates found on this site are of the usual Mexican type, and of large size, while the broken pieces of pottery denote an advanced state of development in ceramic art, comparing favorably with many specimens that I have examined in this section.

Excavations, however, brought no entire ollas to light, but numerous bones and signs of fire were encountered in every direction, while the fallen roof-beams, probably of juniper, were found in an extreme state of decay. Similar evidences of antiquity are common in all of these ruins, while skeletons lying just as they fell in all positions, and marks of extensive conflagration, are seen in many of the outlying and central remains.

It may therefore be inferred that not only are these outposts of great age—their abandonment far preceding the coming of the Spaniards—but that their elaborate system of fortifications availed but little against that Nemesis which they momentarily expected and which finally overtook them. As in the fall of the Roman Empire, it was probably the outlying positions which suffered first, and which gave up their existence to prolong for a few years the waning life of the central body.

A. H. BLACKISTON.

Spokane, Washington.



PICTOGRAPH ON CLIFF, PIEDRAS VERDES RIVER

PREHISTORIC PLACES AROUND COUVIN, BELGIUM*

EUGENE MAILLIEUX has recently given to the Royal Museum of Brussels a collection of flint implements found near Couvin. In their *Bulletin* Baron Alfred de Loë thus describes them and the localities where they were found.—
Editor's note.

In the first place, there is the station of l'Ermitage, the most important in all respects, lying partly in the territory of Couvin, and partly in that of Boussu-en-Fagne. They have found there miscellaneous works of the age of the implements found at Tardenois and Robenhausen (*les industries tardenoisienne et robenhausienne*).†

Next is the station of Nieumont, situated entirely in the territory of Couvin and remarkable for the rather considerable area of distribution, although clearly marked, of the flint implements which have been found. There, the age is entirely *robenhausien*.

Then comes the station of Hanouet, also in the territory of Couvin, on the summit of a promontory easy to defend and rising above the valleys of the Eau-Noire and Ruisseau d'Aine. This place had been afterward fortified by adding to these natural defences a double intrenchment of earth and stone, of a somewhat regular appearance, set almost north and south, and completely fencing up the elevation. They mention at this point the mixture of *tardenoisien* and *robenhausien* implements.

Finally there is the station of Gilminmont situated between Dailly and Presches and occupying, like the preceding, a small rocky promontory overlooking a part of the valley of the Ruisseau d'Aine. The age there is exclusively *robenhausien*, at least as far as is known at present.

The stations of Olloy and Lompret contain a mixture of *tardenoisien* and *robenhausien*.

The specimens gathered at the sites of these 6 places are: small cores, small flakes, small scrapers of discoidal form, small fragments with dorsal cutting, some scrapers very much larger and of an elongated shape, some percutients, fragments of flakes thick and deeply chipped, arrow heads, polished axes, chips variously finished, and waste from cutting.

They are, for the most part, thickly covered with patina, recovered from a thick bed of cacholong and much altered by stone boring mosses.

Let us describe specially: A very small instrument of geometric form, with a dorsal piece cut off, of the *tardenoisien* type. Couvin,

* Translated from *Bulletin des Musées Royaux*—A Bruxelles for RECORDS OF THE PAST by H. M. W.

† M. de Mortillet applied this adjective to the whole of the Neolithic period because of the implements found at Robenhausen.



IMPLEMENTS FROM AROUND COUVIN

station l'Ermitage (No. 1). A pointed fragment much chipped on the edges. Station of Lompret (No. 2). A little flake. (No. 3). The end of a thick flake very much chipped around the edges, *robenhausien* type. (No. 4). A large arrow head in the form of an almond, made from a fragment of a polished axe. (No. 5). A large, elongated, scraper, thick, rounded at the top, classical *robenhausien* type. (No. 6-6). A hatchet of chloromelanite polished all over. It has a length of 0 m 080 and its edge, very oblique, and carefully sharpened, measures 0 m 047 in width. It weighs about 95g. Station of l'Ermitage, territory of Boussu-en-Fagne (No. 7). A little discoidal scraper. Station of l'Ermitage, territory of Couvin (No. 8). A little spherical percutient dented by the blows of percussion. Lompret (No. 9). A little scraper of elongated form. Couvin, station of Nieumont (No. 10).

M. Maillieux will publish shortly in the *Annales de la Société d'Archéologie de Bruxelles* a very complete article on the neolithic stations around Couvin, which will be a new and excellent "contribution" to the study of the prehistoric age of that region.

BARON ALFRED DE LOE.



THE PALESTINE EXPLORATION FUND

A HISTORY of Palestine Exploration has long been wanted and is now very satisfactorily furnished in the neat volume of over 300 pages, issued by the Charles Scribner's Sons under the title, *The Development of Palestine Exploration*. The author is Dr. F. J. Bliss of Beyrout, who gave a course of lectures on the subject at the Union Theological Seminary in New York in 1903, and has now given them to the public. Except that he was unable to tell of the most recent work his book is fair to all, thorough, and perfectly trustworthy. He first tells his reader what the Egyptians and Babylonians knew of Palestine, and then speaks of the early pilgrims, the crusaders, the partly scientific travelers, Robinson (a whole lecture), Renan, and other careful investigators, the Palestine Exploration Fund (a whole lecture); and finally he speaks of the work still to be done. It was no small task to pick out of thousands of writers the most significant but the task has been skillfully done, and this volume will be of lasting value. If he said much of Robinson he was speaking at Robinson's own institution.

Another famous Palestine explorer has gone—Canon H. B. Tristram, whose great work on the *Fauna and Flora of Palestine* is his monument. He has been helpful to the Palestine Exploration Fund from its beginning in 1865, and, after other travels, took up Palestine with remarkable thoroughness. He was a graphic writer as well as a careful student, and his accounts of adventure in remote corners of the land are as interesting as anything that has been written about it.

Not long before his death Sir Charles W. Wilson made a full study of Golgotha. He was always so fair to all sides in such a case that he kept his own views in the background, but there is no doubt that he had collected all the information which has an important bearing on the subject, so that the latest publication by the Fund, *Golgotha and the Holy Sepulchre*, with its plans and illustrations is likely to be the standard book until some further discovery shall be made, which now seems unlikely.

THEODORE F. WRIGHT,

Hon. Secretary for the U. S.

42 Quincy St., Cambridge, Mass.

BOOK REVIEWS

A HISTORY OF EGYPT *

THE general reader is indebted to Prof. Breasted for one of the most attractive and interesting histories which has been written on Egypt. Many persons are acquainted with a multitude of names and places in Egypt, but few have a comprehensive idea as to the position in time and place of these names or the rise and fall of the various rulers of that land. The immense period of history from the earliest evidences of Palæolithic man to the conquest of the Persians is concisely and interestingly told and the salient facts brought out in their proper perspective. To the student of history it is a most valuable reference book.

Prof. Breasted has had special opportunities to study not only the monuments and inscriptions in Egypt, but also those to be found, scattered throughout Europe, in the great Museums, having been on a mission to collect records of Egyptian monuments for a great *Egyptian Dictionary*, endowed by the German Emperor. With this wealth of information and translations of inscriptions in hand he was exceptionally fitted for the task of writing this volume for the benefit of Travelers in Egypt, students of European history and Old Testament students.

Egyptian history is traced from the time when the inhabitants made stone implements and rude carvings of animals in pre-dynastic time,—a time of which we know little; the first introduction of an alphabet and the early traces of a religious system of the Middle Kingdom; the rise of the Hyksos power; the two periods of "The Empire," its decadence and the final struggle with Persia and Babylon.

One of the most valuable sections of the book is the chronological Table of Kings, which covers the period from the introduction of the calendar, 4241 B. C., to the time when Egypt became a Roman Province in 30 B. C.

BUDDHIST AND CHRISTIAN GOSPELS †

THIS book by Albert J. Edmunds and M. Anesaki is of more interest from a theological than from an archæological standpoint; yet there is considerable, especially in the first chapters, of a historical character.

The wide spread of Greek and Roman mythical and religious ideas and their influence even in India and Ceylon is clearly brought

* *A History of Egypt*, by James H. Breasted, xxix, 634 pp., 200 illustrations and maps. Charles Scribner's Sons, New York City.

† *Buddhist and Christian Gospels, Now First compared from the Originals*. By Albert Edmunds, Edited with parallels and notes from the Chinese Buddhist Tripitaka by M. Anesaki. Yuhokwan Publishing House, Tokyo. Imported by Open Court Pub. Co., Chicago.

out and also the counter influence which the author believes these countries had on Greece and Rome. A coin of the I or II century A. D. from the valley of the Indus bears the image of Buddha with his name in Greek letters.

The author considers the region between the Ganges and the Nile as the "Holy Land of the human race." "Hebrew and Parsi, Hindu and Christian, Buddhist and Muslim, all seek the fount of their faiths in that mystic realm. The lost religions of Babylon and Egypt were born there. Even the Greeks and the Romans were debtors for the Mysteries of Eleusis. Among the great nations of to-day, only those Chinamen and Japanese who practice their ancestral religions uninfluenced by Buddhism are aliens thereto."

The parallels in the Buddhist and Christian Gospels are made specially interesting because of the notes by Mr. Anesaki a Japanese scholar, which show his point of view. For this reason, whatever the reader's opinions as to the pertinency of the parallels and notes, the work is worthy of consideration.

RELATIONS OF GEOLOGY WITH OTHER SCIENCES*

READERS of this journal will be most interested in those parts of this great work which describe and discuss the Glacial period and its drift formations, the common meeting ground of geology, meteorology and anthropology.

In the first volume about 75 pages, with nearly as many figures in the text, relate to existing ice-sheets and glaciers and the ancient continental ice-sheets. In Volume II the evidences of glaciation in low latitudes during the Permian period are considered, and an atmospheric theory of the grand climatic changes bringing both the Permian and Pleistocene accumulations of snow and ice is presented. This theory, chiefly elaborated by Prof. Chamberlin, relies on great elevations of land areas as the primary cause of changes in the constitution of the atmosphere inducing worldwide tendencies toward glaciation. Volume III gives 190 pages, with 108 illustrations, to the chapter treating of the Pleistocene or Glacial period.

Some of the conclusions of this work, on very distinct glacial and inter-glacial epochs, the duration of Glacial and Post-glacial time, the conditions producing the continental ice-sheets, and evidences of man's presence in the Ice age, are debatable. The authors have contributed greatly to glacial geology by these full statements of their views.

The grandest feature of this extensive treatise on the whole domain of geology is where it becomes a part of astronomy,—in the

* *Geology*. By Thomas C. Chamberlin and Rollin D. Salisbury, Heads of the Departments of Geology and Geography, University of Chicago. In 3 Volumes. (New York, Henry Holt and Co.) Vol. I, *Geologic Processes and their Results*, 1904; pp. xix, 654. Vols II and III, *Earth History*, 1906; pp. xxvi, 692, and xi, 624.

Planetesimal Hypothesis of the origin of the earth and the solar system from a spiral nebula,—which is now fully placed in publication, with illustrative diagrams. The suggestion is made that intalling planetesimal bodies may have formed the earth without its becoming molten. To the present reviewer this seems not to have been the case either with the earth or the moon, if they were of such origin, for both have had such extensive volcanic action as to indicate their having been mostly or wholly fused during a considerable part of the time of their accumulation. The planets undoubtedly tended in some degree toward the same intensely hot condition which is reached by the sun and stars in the concentration of originally nebulous matter.

* * *

THE FIRST CENTURY OF GEOLOGY IN AMERICA*

This very interesting historical monograph of geological investigations and workers in the United States and Canada covers a period of about a hundred years, beginning with the earliest publication of geological papers in 1785 in the *Memoirs of the American Academy of Arts and Sciences*. The greater activity of our national surveys, and of independent workers, during the past 20 years, is not here narrated. Some of the older geological maps and sections are reproduced. The progress of knowledge is shown often to have been attained through partly erroneous theories, stimulating more careful and thorough explorations and studies. Excellent portraits of nearly all the leading geologists of that century are presented, and the history is entertainingly and instructively told.

The plan is similar with that of Sir Archibald Geikie in his work, *The Founders of Geology*. What he did for the history of geology in Europe, Dr. Merrill has here done, with more ample details, for our country and Canada. A hundred and sixteen portraits are given in connection with the records of geological work; and an appendix, in 27 pages, contains 197 short biographic sketches.

WARREN UPHAM.

* *Contributions to the History of American Geology*. By George P. Merrill, Head Curator of Geology, U. S. National Museum. From the Report of the United States National Museum for 1904, pages 189-733, with 37 plates and 141 text figures. Washington, Government Printing Office, 1906.



EDITORIAL NOTES

URN UNDER THE COLUMN OF TRAJAN:—In excavating at the base of the column of Trajan in Rome, Signor Boni has discovered an urn containing the Emperor's remains.

SHRINE OF ONE OF THE CANDACE QUEENS:—Mr. P. D. Scott-Moncrieff of the British Museum has returned from Khartum, where he has been engaged in overseeing the setting up of the north wall of the shrine of one of the Candace queens, which was found two years ago on the Island of Meroe. The companion wall is in the British Museum.

CLIFF DWELLINGS AND CAVES OF PAJARITO PARK.—The Archæological Society at Santa Fe, New Mexico, is taking active steps to make this park more accessible. Pajarito Cliff Dwellers' Park, is in Alamo Canyon, about 5 hours drive from Santa Fe. Strict orders have been issued and are being enforced to preserve the ruins which are very numerous and exceedingly important in this Park.

TEMPLE AT DEIR EL-BAHARI:—Mr. Hals, Dr. Naville's lieutenant, has cleared the south court of the temple of Deir el-Bahari and has in so-doing discovered the south temenos wall. What has been believed to be the south boundary of Queen Hatshepsut's temple has proved to be the north temenos wall of one built by the Mentuhoteps of the XI Dynasty. Among the interesting finds, new colonnades, painted reliefs, a magnificent statue of the goddess Hathor, a life-size head in sandstone of King Mentuhotep, and a vase in pottery covered with rope net work in perfect condition may be mentioned.

ARROWHEADS SHAPED WITH A WOODEN INSTRUMENT:—A Michigan boy, Ernest Baurman, became interested in the arrowheads found on his father's farm and as he studied the implements and the chips began to wonder how they could have been made without metal tools. Noticing the direction in which the pieces were flaked off, he began experimenting, and finally found that with a piece of oak, slightly pointed at one end, he could chip glass or flint into the shape of arrowheads, some of which are remarkably perfect. He is able, by this method, to remove flakes as large as $\frac{1}{2}$ in. by $1\frac{1}{2}$ in.

ORIGIN OF BROOCHES:—It is interesting to find that, according to Prof. Ridgway and Mr. Reginald Smith, brooches were invented in central Europe and then spread both northward and southward. The earliest known form has been named "Peschiera," after the site of the pile-dwellings on Lake Garda. Representatives of different Roman types have been reported in England. One reported

to have been found in London is of a peculiar type. Brooches of this variety are made of one, two or four spiral coils of wire. Probably this developed from the spirals used for decoration in the Hungarian Bronze Age.

CONFIRMATION OF ANCIENT REPORTS CONCERNING THE EMPEROR AUGUSTUS:—One of the writers of the early Roman Empire referred to certain “bones of giants” and “arma heroum” which the Emperor Augustus found on the island of Capri. From the words used it is evident that Augustus discovered something other than ordinary flint implements of the polished stone age which would have been called “gemmas ceraumas,” or “lapides fulminis,” lightning stones. It is an interesting confirmation of these references that a physician has found, in the same locality, rhinoceros bones and rough stone implements, which might well answer to the description of the finds made by the Emperor.

ROMAN BATHS IN LUXEMBOURG:—Near the village of Mersch, in the province of Luxembourg excavations have uncovered a series of Roman baths in an excellent state of preservation. The floor communicates with ovens for radiating heat. Vases in pottery, kitchen utensils, fragments of marble, mosaics, and mouldings, with the color preserved, are among the objects brought to light. Presumably a military establishment was erected on this site.

RUINS DISCOVERED IN RHODESIA:—In Rhodesia recently discoveries have been made which have not yet been satisfactorily explained. The ruins are for the most part of granite and are never rectangular or square. No mortar was used, but still the walls are in good condition even after 3,000 years or more. In more than 120 localities similar ruins have been found. A few are Zimbabwe, Mundie, M’Popoti, Chum, Dhlo-Dhlo, Khami, and Niekerk. In some cases the walls run up in one face, in others they are built in 3 or 4 tiers, stepped back with terraces 2 to 10 ft. wide.

The ornamentation is characteristic, and was made by introducing sloping tiles or thin slabs of stone of different color, or courses of different colored rock were laid. Some 6 different types of ornamentation are recognized.

The Niekerk ruins cover an area of 50 sq. mi. This whole region is practically covered with remnants of walls and undressed stones. These walls were probably built for defence.

MYSTERIOUS CASTLE DISCOVERED IN IRELAND.—A short time ago a laborer in County Roscommon, Ireland, came upon a cavern, about 6 ft. deep, with arched roof. From this a narrow, winding passage led to a castle. In this passage were found human skeletons and scattering bones, together with armor and weapons of great age. There are traces of inscriptions on some of the walls.

There is a legend to the effect that a band of Connaught warriors took refuge here after a defeat. Both ends of the passage were then closed up by the victors and the warriors were left to die.

EXCAVATIONS IN THE GROTTA OF SPY, BELGIUM.—During the first half of the year 1905 excavations under the direction of the Royal Museum at Brussels brought to light in this famous cave about 13,000 flint implements. Some undisturbed beds were found containing feast remains (broken bones), flints, and ornaments. In one of these, at a depth of 2 m 50 a hearth was found intact full of flints and feast remains, among which were pieces of molars of *Elephas primigenius*.

In the disturbed earth were found a piece of bronze rolled into a spiral; two fragments of pottery, evidently of vases not turned, but still very smooth; some human bones and stone beads from a necklace.

Belonging to the upper layer of the palæolithic epoch the following and have been found here: flakes and flint chips by the thousand; a kind of flint saw; instruments sharpened on one edge; bones of various animals from *Elephas primigenius* to *Felis lynx*, for example, milk teeth of the mammoth, large canine teeth of *Ursus speloeus* and part of the lower jaw of *Rhinoceros tichorhinus* with the teeth; broken bones; pointed instruments of bone; ivory objects and waste from cutting ivory. Among the ivory pieces were ornaments which were evidently made on the spot, for they have been found in all stages from the small stick of material to the finished ring, bead and pendant.

Of the lower level of the palæolithic epoch, there were feast remains; bones of animals of several species, including molars of an adult mammoth; thousands of chips of flint; and amygdaloidal pieces of flint.

ANOTHER TOMB OPENED IN THE VALLEY OF THE KINGS:—Early in February, 1906, during excavations being carried on under the direction of Mr. Theodore M. Davis, a flight of rock hewn steps was revealed near the tombs of Rameses III and Rameses XII. Before long it was found that these led down to a tomb evidently untouched for centuries. From the hieroglyphics on the mummy cases—there were two mummies—M. Maspero learned that they belonged to Tioua and Ioua—"Ioua hereditary prince, chief friend among the friends of the sovereign." These were, then, the parents of Tii, a queen of the XVIII Dynasty.

The funeral furnishings throughout are magnificent. The tomb had been looted in ancient times so that jewels and most of the easily portable objects had been removed. Still, two alabaster vases were left, as well as half of the gilded open work casing from one of the mummies and numerous larger objects. Mummy cases had been torn off and scattered in every direction. One of the most important finds is a chariot, shining with gold and scarlet. The pole is broken and some of the spokes are bare, but otherwise it is in good condition.

The yoke was one of the first things found near the entrance. This with the whip completed the outfit.

Four canopic jars of alabaster with covers carved into heads were found. Three chairs of rare elegance are among the discoveries. Space forbids more than a mere mention of the 72 sealed jars of provisions, the embroidery box, bed, *ushapti* figures, provision basket, and rich mummy cases.

The contents have been removed to the museum at Cairo which was accomplished with practically no injury to the treasures.

GRAVES UNDER THE ROMAN FORUM:—Concerning graves found 5 meters below the level of the Forum and 3 above sea-level Rodolfo Lanciani says: "In the remote age to which the graves pertain, the hollow of the (future) Forum was covered by the waters of the Lesser Velabrum . . . Such being the condition of things, the presence of graves under the foundation of the equestrian statue of Domitian in the middle of the Forum becomes a problem of doubtful solution, because it involves as a consequence the fact that the primitive dwellers on the Palatine, on the Subura and on the Carinæ, having at their disposal vast surfaces of dry land in which to lay their dear ones to rest . . . made use instead of the bottom of a marshy lake below the level of the Tiber . . . It is wiser to postpone any judgment on this affair and to discuss only facts . . . Such is the discovery of a skeleton, made in mysterious circumstances, at the south corner of the above mentioned foundation of Domitian's statue . . .

"The skeleton belongs to a woman who was well formed, but a dwarf only 1 m. 20 high [3 ft. 11¼ in.] The 'sutura metopica' in the fore part of the skull proves this woman to have belonged to a superior dolichocephalic race which lived on the shores of the Mediterranean long before the invasion of Eastern immigrants, whose skulls are rounded. The dwarf woman was not regularly buried, but simply thrown into the pond so that her skeleton was lying at the bottom of it, with arms outstretched. We feel an additional interest in the fate of the unhappy being from the fact that she appears to have been murdered. Whether the instrument used was a stone hammer or a stone chisel, the fact remains that the break in the skull is sharp, well defined, and colored by the same patina of age which has stained the rest of the cranium."

THE ROOS CARR IMAGES:—The wooden model of a boat and warrior crew in the Museum at Hull, England, is one of the most interesting relics there. It was dug up in 1836 from a bed of blue clay 6 ft. below the surface in Roos Carr, Holderness. The boat is in the shape of a serpent, the prow being formed by the head. There are 4 naked warriors from 13½ to 16 in. tall. The bodies are very narrow, being no wider than the heads. There are no feet; the legs are simply thrust into holes in the boat and cut off below. The

eyes that still remain are of quartz or limestone. Only two of the figures have arms preserved. The reproductive organs, though mutilated, were evidently much exaggerated originally. One warrior has a slightly oval shield and a hole bored in the right arm, probably to hold a club. Poulson in a history of Holderness describes them as each armed with a club and two shields, one smaller than the other. He gives a drawing showing the larger shield placed lower than the other.

In 1903 another warrior figure, long a family treasure, was presented to the Museum. It had belonged to a man who was a surveyor at the time of the discovery of the images. This figure has two shields, placed as Poulson represented them in his drawing. It is entirely possible that this is the one from which he made his drawing. The tradition was that there were originally more figures, so decayed that they could not be removed. Eight was the number given. This 5th figure was therefore supposed to be one of the missing warriors. Careful examination, however, made it evident that the boat was complete, and that no more figures could have been placed in it. So this must have belonged to another group. Further examination revealed evidences of the use of different wood, and certain differences in workmanship. One of the other figures appears to be like this in material and workmanship, so Mr. Thomas Sheppard, the curator of the Museum, thinks it probable that they have representatives of two crews, 3 of one and 2 of the other.

There is nothing in the objects themselves to determine their age. The construction, present condition, and the fact that they were found 6 ft. below the surface point to great antiquity. A somewhat similar figure was found in a peat bed in Scotland in 1880, and 3 have been discovered in Scandinavia and the adjacent German mainland. Comparison with these, a study of ancient Scandinavian idol-worship and the fact that the part of England where the images in question were uncovered is known to have been frequently visited by the Scandinavians, would indicate Scandinavian origin, possibly in the time of the invasion of this region by the Vikings and Danes; or by earlier tribes from the opposite shores of the North Sea.

PALACE AT CNOSSUS, CRETE:—The walls of the palace of the Mycenæan period, uncovered at Cnossus by Mr. Arthur Evans, were built of heavy blocks of gypsum, 3 ft. sq. for the first course, and then of rubble covered with stucco. The interior was painted with ornamental designs, landscapes, and scenes from daily life. The size of the whole may be judged from the fact that the great court in the center is 91 ft. by 228 ft. Around it are store-rooms, living room and rooms of state.

From a corridor, originally decorated with life sized marching figures, a broad stairway leads to the rooms on the second floor. Part of the second floor is still in place, with stairs leading to a third, and

indications of a fourth. Faience plaques found represent houses with as many as four stories.

The store-rooms are filled with *pithoi* or large jars. An interesting line of rectangular cists for holding oil or even wine, was found in the floors of the store-rooms. Underneath were more so constructed that part of the pavement had to be removed in order to get into them. Fragments of gold foil proved them to be the treasure vaults. By further investigation 27 more were discovered in the corridor.

The drainage system was remarkable. The stone conduit 3 ft. high and half as wide for carrying off surface water had, opening into it, stone shafts running up through the building to the roof. Connected with these were latrines provided with flushing arrangements.

Northwest of the palace is what is probably the earliest extant example of a theater. A rectangular paved area 33 ft. by 42 ft. is lined on 3 sides by seats, 13 rows on the east, 6 on the south, 3 on the north.

Mr. Evans thinks this is the famous labyrinth of Cnossus, and connects the word "labyrinth" with the Carian word "labrys" meaning the double axe, the sign of Cretan Zeus. This emblem is found everywhere in the palace. The great number of rooms would in time have given rise to the later meaning of the word.

Concerning the early inhabitants of Cnossus Mr. W. N. Bates, of the American School of Classic Studies at Athens, says: "Who these people were who lived at Cnossus for at least a thousand years prior to 1200 B. C., or what language they spoke, we do not know. We call them 'Mycenæans' and the ancient Egyptians seem to have called them 'Keftiu.' Many tablets in their language were found in the palace, but these cannot as yet be deciphered. Whether they were Greek or not, we cannot now say; but at least they were a people who attained a high degree of civilization at an early time, and from them much seems to have come down to the Greeks of the historic period."

THE MITCHELL COLLECTION:—The Rev. Edward C. Mitchell of St. Paul, Minn., an old collector of archæological relics, has recently presented to the Minnesota Historical Society, his fine and large collection, consisting of more than 21,500 relics in stone, bone, horn, shell, copper, pottery, etc. These relics are now arranged in 14 large plate-glass cases in a room 41 ft. by 17 ft. in the beautiful new Capitol building of Minnesota, in St. Paul.

One case contains relics from all over the world outside of the United States, including some very fine palæoliths from France, and fine pre-historic relics from Denmark, Sweden, Switzerland, Germany, England, Ireland, Mexico, Japan, Canada, South Sea Islands, etc. From ancient historic times there are some 400 coins, 1,000 to 2,000 years old, from Rome, Greece, Byzantium, etc.

The other 13 cases contain relics gathered from all parts of the United States. These are mostly pre-historic.

This collection is especially rich in several lines; 1st in pre-historic American copper relics, of which there are 600 specimens, including some of the finest pieces known; 2nd, in extra large stone spear-heads and knives, which are very numerous and fine; 3rd, in an unique set of stone saws, from Missouri; 4th, in large caches of flint spears, etc., including a cache of 192 beautiful "Leaf-shaped" spears and knives of fine mottled flint wrought very thin and finely chipped. These were plowed up near a large tree, in Fulton Co., Ohio; 5th, in tiny "Oregon gem points," of which there are nearly 2,000, including many of the finest forms in agate, chalcedony, jade, fine flint, etc.

To indicate the great range and variety of relics in this collection, we may say that there are in stone relics, spear-heads, arrow-heads, axes, hatchets, (plain, grooved, perforated, chipped, polished, etc.) celts, chisels, gouges, tomahawk-blades, daggers, knives, hammers, club heads, spades, hoes, maces, ceremonial stones, scrapers, skimmers, picks, moccasin-lasts, mortars, pestles, pitted-stones, discoidal stones, plummets, rollers, cones, adzes, drills, awls, rubbing-stones, idols, gambling-stones, grinding-stones, wedges, amulets, spindle-whorls, gorgets, pendants, sinkers, slug-stones, paint cups, pipes, saws, discs, "crooks," tubes, beads, images, rings, needles, scarabs, and many other unfinished articles.

In copper there are spear-heads, arrow-heads, knives, awls, axes, hatchets, celts, chisels, spuds, fish-hooks, a sickle, reamers, beads, needles, gorgets, pendants, crescents, spades, hoes, bangles, bracelets, harpoon, pottery-wheel, ornaments, pick, plummets, etc.

Among the copper relics there are a number of famous pieces, especially some long knives, and a bayonet-shaped spear-head 17 in. long, and in fine condition. Experts have regarded this spear-head as the "Champion" among ancient American copper spear-heads, as far as known.

In bone relics there are awls, knives, fish-hooks, beads, spear-heads, arrow-heads, tubes, scrapers, chisels, ornaments, spoons, spades, hammers, strings of wampum, whistles, flutes, harpoons, needles, diggers, pipes, images, charms, bracelets, and skulls of mound-builders.

In shell relics there are hoes, beads, strings of wampum, anklets, necklaces, breastplates, bead-ornaments, hair pins, ear-drops, masks, plummets, sinkers, digging tools, dippers, cups, celts, etc.

In pottery, there are over 100 vessels of many shapes and sizes, plain and ornamented, besides images, idols, pipes, balls, ornaments, lamps, spindle-whorls, awls, discoidals, rattles, perforated discs, scarabs, paint cups, beads, tablets, tiles, etc.

There are also some relics belonging to remote historic times made of copper, brass, lead, silver, bronze, iron, glass, wood, etc.

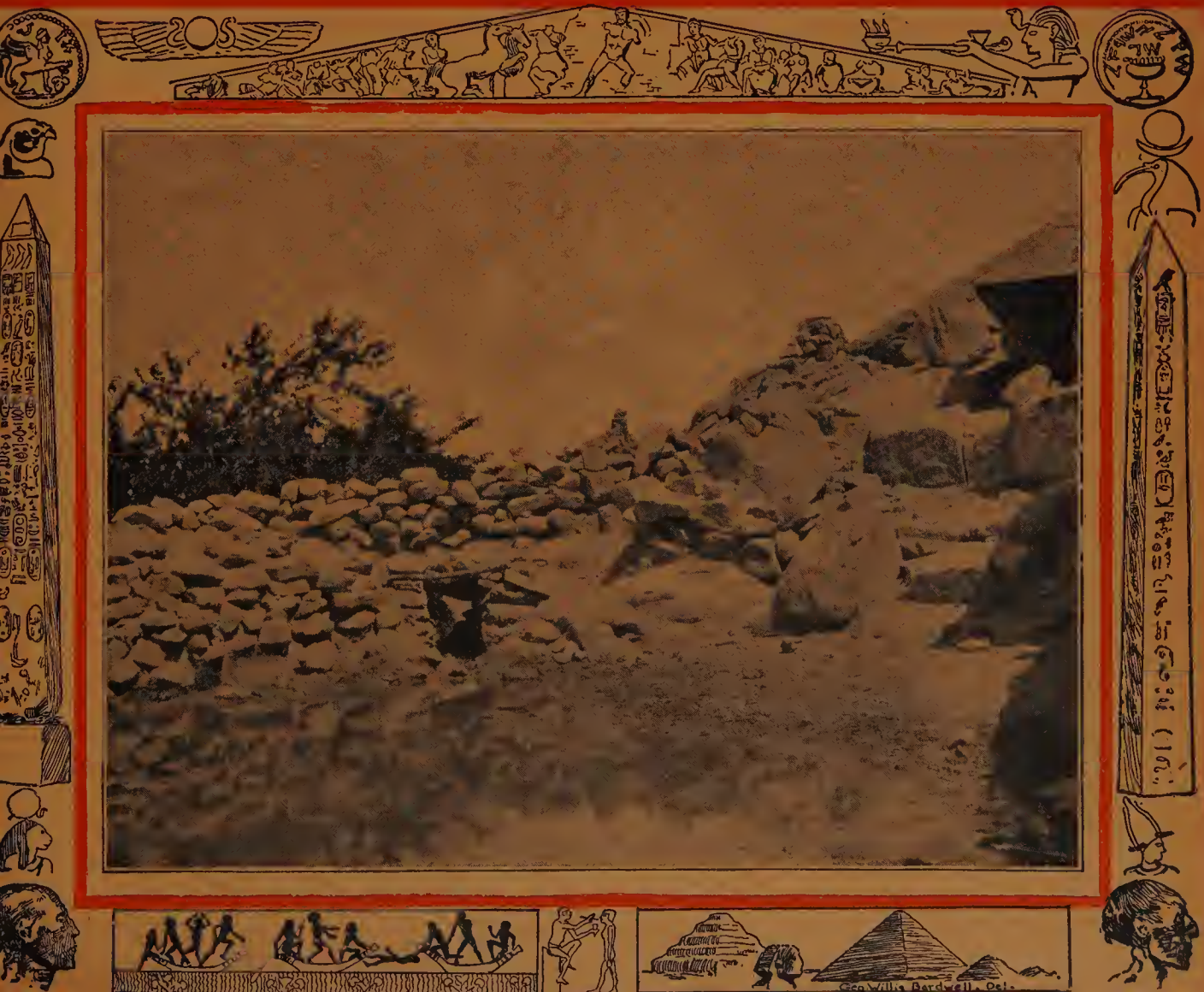


RECORDS OF THE PAST

VOLUME V

JUNE, 1906

PART VI



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JUNE 1906

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Photo. by H. E. Hoopes.

FLUTE CEREMONY AT THE SACRED SPRING — MAKING RAIN, MIDDLE MESA, MOKI, ARIZONA

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PART VI

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SACRED SPRINGS IN THE SOUTHWEST

SPRINGS are none too many in the southwestern United States, and for this reason they have been from ancient times prized as a most valued possession. The peoples who dwelt in this region saw in these sources of life-giving water the founts of continuance and well-being, and in confidence located near them their pueblos.

Save air, no elements of nature are nearer to human life than those combined into the primitive fluid which must always be within reach of the men who put themselves into the grasp of the desert. The primary knowledge of the tribes who were the pioneers, and of every human being that has since made his home in the great "American Desert" was complete as to the location, distribution, and idiosyncracies of water supply. No scientific survey could be fuller and more accurate except in the paper record, and no men save those who are at one with, almost part of, the environment, could develop the water sense to such a degree as did the Indians.

There is a story of a troop of Texas Rangers about to perish from thirst who gave their Indian guide the alternative of death or a reward, based on his failure or success in finding water within two hours, and the Indian earned the horse and gun by a display of desert craft that astonished the seasoned frontiersmen.

Since that band of Coronado's veterans pushed into the unknown country and stopped enchanted on the brink of the Grand Canyon,

travellers and explorers have marveled at the skill of the desert people and have caught an inkling of the way in which he reads the trail, the plants, the weather, and the "signs" that give a clue to the initiated.

By removing a stone which caps a secret spring whose location in such a spot seems improbable, or by pointing out a "seep spring" or tank among barren rocks, the Indian earns a regard and respect that has true sincerity from those who know the trials of parched lips and the suffering of thirsty animals.

Those who travel in the southwest move on a checkerboard where the plays are from water to water, and woe betide the man who makes an error. Much more was this important to large bodies of migrants who passed from one locality to another unceasingly during earlier times, traveling afoot, carrying children, food, and other burdens on their backs, and helping the aged on the toilsome journey. One may imagine the vast preparation necessary for a move on the part of the people in a pueblo, who may have been forced to migrate by perhaps many causes besides necessity, such as clan enmities, pressure of outside peoples, superstition, or the command of some powerful medicine man. For many days men have run to spy out the favorable locations in the region, hastening back to report.

When a choice is made, the able-bodied cache jars of water at points along the route and the transfer begins, not in most cases *en masse*, but by gradual infiltration of groups, and with many back and forward journeys to bring supplies. An unenforced migration may require several years before it is complete and the old pueblo, sacked and abandoned to the dead, gives place to a new pueblo laboriously built many miles from the former settlement.

In such manner the ancients traversed the solitudes of the desert land and brought to every spot where there was living water and a hope for subsistence the active life of the Pueblo housebuilders.

Thus, if one has a map of the springs and live streams, he would need no further information as to the distribution of pueblos, for water is the key.

Spring water is necessarily most prized, because it is drinkable and always at hand, while the watercourses, which, during the greater part of the year are sinuous reaches of dry sand, furnish at flood a quickly disappearing supply of thinned mud, distasteful to man and beast except in the distress of thirst.

The uniformity of religious belief and practice among the Pueblos is a striking fact, perfectly intelligible by reference to the compulsion of environment, which has had much to do with making this vast region a culture area. It is not to be inferred that the Indians of the southwest are peculiar in the worship of springs, since the sentiment is world wide, and has had a vast range in time, perpetuates itself in the folk lore of the highest civilizations, and presents in its manifestations a most interesting body of myth and fancy. In the Southwest, however, the arid environment has so intensified this feature of primitive culture



CANELBRA SPRING, ARIZONA

that no spring in the region is without evidence of many offerings to the deities of water.

It is small wonder, then, that the Pueblo Indians came to regard springs with special veneration; and that they wove around them myth and tradition, and made them objects of religious worship. To one acquainted with the environment and its radical needs this seems to have been a natural, even though unconscious generalization.

Perhaps offerings to springs will not admit of such simple explanation. Perhaps the mystery of the underground source of water welling up from unknown depths, impressive always even to the observer who believes himself free from the trammels of superstition, has also had a powerful effect on the imagination of the Indian, leading like many other natural phenomena to an attitude of worship of unseen powers behind these masks.

The religious philosophy of the Indian animates the natural world and furnishes beings of different ranks and occupations as moving forces that work for his benefit or harm. With these he is always striving to enter into communication and of the vast number of methods embodied in rituals, from the most complete to the simplest, the offering to the spring is one.

The feathered stick set in the edge of the water by the Hopi are messages to the gods of the underworld and the snakes employed

in the Snake Dance are set free at the springs to carry the petitions of the people to the gods. The miniature water vessels thrown into the springs may be petitions and reminders to the ruler of the waters of the world and the rain gods to pour out plentifully from their vessels upon the lands of the people.

Sacred Springs may therefore be regarded as altars, and the offerings as sacrifices, whose essence may be carried by the water in the same way as the fire offering is carried by the fire.

There are many kinds of these offerings, perhaps the most common being pottery vessels, at least objects of this character are generally the only ones which survive. In an ancient spring near the Hopi pueblos, numerous small pottery vessels of unusual forms were found; similarly from the ancient spring in Socorro Co., N. M., several hundred miniature vessels were taken recently. Stone beads are also very common in the sands of springs, and this form of offering was quite extensive. The writer observed in Lake Xochimilco in Mexico, a vast mass of offerings lying on the bottom of the "Ojos," or sources of the lake, which are two crater like depressions, perhaps 40 ft. deep. These consisted principally of pottery whole or in fragments.

There were also bones of animals, two horse skulls especially showing with distinctness in the limpid water. That the Plains Indians also venerated certain springs is shown by the remarkable series of chipped flint implements found in the Afton spring by Prof. W. H. Holmes.

It seems probable that a more complete knowledge of the beliefs in relation to springs among the different Pueblo Indians, will reveal an interesting chapter in the history of the dwellers of the semi-arid southwest.

Mrs. Stevenson says the Zuñi believe that there is a god who owns the springs of the six regions, from whom the shadow people or rain-makers beg water. These shadow people collect water in vases and gourd jugs from the six great waters of the world and distribute it through the clouds. The Zuñi also believes that the sacred springs are used for the gods to look through to the upper world, and the Spanish word *ojo* (eye), which is part of so many names of springs in the southwest, would corroborate this statement, and has probably the same significance.

Many of the decorations on modern Zuñi pottery are conventional representations of springs, ponds, lakes, and animals associated with springs.

The Hopi believe that the waters under the earth are controlled by a great plumed serpent, and that he has favorite springs for his appearances. Montezuma's Well, in northwestern Arizona, is said to be one of these.

The Tewa believe that a dragon-like ærial being floats about over the springs, and that to his presence is due the perpetuation of the water supply.

Among the Pueblos there is displayed a profound veneration for all natural phenomena, the sun as first cause, the sky, clouds, wind, rain, mist, hail, snow, ice and frost, the ocean, lakes, wells, springs, water holes, marshes, rivers, brooks and even mountains, as purveyors of water, having a share in Pueblo worship. The animals and plants whose habits and diffusion connected them with water were generally held in esteem, and were intimately woven into the texture of religious and symbolic art.

Some springs are more sacred than others; for instance, the one at each group of Hopi pueblos developed with great labor by digging out the earth around it, forming a pool walled up around the sides, and having steps leading down to the water, where certain cere-



KENALABAH SPRING, SHOWING FEATHERED PRAYER STICKS, ARIZONA

monies are performed. Though many examples of large walled springs have been found in connection with ancient pueblos, it remains to be seen whether or not this custom was general.

Springs of this character may have been improved by a single fraternity for the performance of a particular ceremony like that of the Flute society at Hopi. Still, the largest spring, its size giving evidence of the favor of the nature deities, was entitled to be the chief spring of the village, and as such was chosen for the center of remarkable rites.

It may be said in passing that one of the chief causes of friction between the Hopi and the agencies of the Government who sought

to better their condition was the profaning of the sacred springs by the location of school buildings, wash houses, etc., near them. The Hopi have now accepted the situation, and most of them, no doubt, see the practical value of the plan, but the benighted conservatives deeply disapprove of this evidence of progress.

It is not necessary that springs held in great esteem should be located near the present villages, they may be in fact 100 miles away, and the one delegated to bring "sacred water" from such a spring religiously makes the journey and returns with a tiny vase filled at the command of the priest who conducts the ceremonies. During a ceremony at a Hopi pueblo one may see toilworn men returning from quests to the sacred springs, bringing water, rushes, clay and other things required in the observances.

On one occasion the writer saw a party, then 70 miles from home, going to fetch water from a spring some dozen miles farther along the trail. This custom is an important clew to the location of the former seats of the clans that inhabit the present villages; because the old though ever vital traditions prescribe for ceremonies which are perpetuations of clan observances, water from springs at which their ancestors drank. Where the inquiry is made one may learn that near the springs visited to obtain water as prescribed were the old pueblos of certain clans.

It may be pointed out in this connection that the history myth of the Zuñi is in large measure a recounting of the springs at which they halted in their wanderings from the earth navel whence they issued, to the traditional center of the world where they now live.

In reference to the care of springs, Dr. Fewkes says that the clearing out of sand drifts is one of the few instances of communal pueblo work performed by the Hopi. Notice of this event is given by the town crier at the direction of the chief and all the men of the pueblo aid with a will. When the Sun Spring was cleaned out in the autumn of 1898, the men of Walpi worked there for 3 days, and the women cooked food nearby; so that at the close of each day there was a feast.

While the work was going on a circle of the old men smoked native ceremonial tobacco in ancient pipes.¹ Among the Zuñi the cleaning of these sacred springs is also a ceremonial observance, and one spring, it is noted, is quite appropriately renovated by the frog clan.

There is evidence that on abandoning a pueblo the Indians "killed the spring," that is, covered it over and cunningly hid it from view. One such spring was accidentally discovered near San Mateo, New Mexico, by a horseman who noted that the ground at a certain spot gave way under his horse's feet. On digging, first a layer of long strips of cedar bark was uncovered, then a floor of pine logs, and so on for several feet, when a spring of clear running water was found.²

¹*Tusayan migration Traditions*, 19th An. Bu. A. Eth. page 615.

²Bandelier. Final Report. Pap. Arch. Inst. II Cambridge. 1892 P. 308.



LAKE IN VOLCANIC CONE—THE HOME OF THE GODS OF WAR. A SACRED
LAKE OF THE ZUNIS IN ARIZONA

Another, discovered 3 miles west of Chaves, N. M., on the Santa Fe railroad was choked with rubbish containing entire vessels of pottery, and the whole was covered with a layer of clay mixed with flint implements. In this spring was found a serpent fetish of wood.*

Other fetishes like this have been taken from a spring at Tule, Arizona, and Mangus spring on the Upper Gila, southwestern New Mexico. The association of the snake with water and the myth of the great serpent who lives in the underground water would seem to have been widespread and sufficient to account for the placing of these effigies in springs.

Near Zuñi, the engineers who are building a great dam to impound the waters of the Zuñi river cleaned out in 1904 an excellent spring, and in the debris found many ceremonial objects, which, unfortunately, were not preserved. This spring, which has an important place in Zuñi tradition, wells up through a deposit composed of the remains of pleistocene animals, and on the completion of the dam it will be submerged.

WALTER HOUGH.

National Museum,
Washington, D. C.

*Op. cit. P. 325.



ROMAN TERRA-COTTA LAMPS*

OF the many thousands of objects that crowd the museums of antiquities in the various cities of Europe, scarcely any are smaller than the terra-cotta lamps used by the ancients. However, from their artistic form and the innumerable subjects treated on them by way of ornamentation they are easily one of the most interesting of the objects made of clay.

While it is true that the Egyptians and Greeks used lamps,¹ yet there is evidence to show that they were not in general use among the Romans until about 300-250 B. C. Pliny² says that a lack of oil till about this time prevented their use. Martial makes a candelabrum say "candles (*candelae*) gave us our ancient names. The oil lamp was not known to our thrifty forefathers."³ Before their introduction, candles (*candelae*) made of wax and tallow; torches (*taedae* or *faces*), bits of pine wood or a sort of metal cornucopia filled with flax, or tow, and covered with resin, oil, pitch, or wax, were used for illuminating purposes.⁴

The candelabra commonly mentioned in literature were supports merely, originally for candles, afterwards for lamps. These were made of wood, bronze or precious metals and consisted of the foot, shaft, and plinth or tray. These have been found in large numbers at Pompeii and other sites.

Two terms were applied to lamps by the Romans, *LYCHNUS*, from the Greek *λύχνος* and *LUCERNA*, derived, according to Varro,¹

*Read, with stereopticon illustrations, at the Classical Conference at Ann Arbor, Michigan, March 29, 1906, by Professor Edward W. Clark, of Ripon College. The illustrations are from originals, part in the writer's possession and part in a collection belonging to Ripon College.

1. The invention of lamps is first referred to the Egyptians, who declared that Vulcan made them, Minerva supplied the oil, and Prometheus lit them. No Egyptian terra-cotta lamps are, however, found earlier than the Roman period. They are first mentioned by Pherékrate's the Athenian poet of the time of Alexander the Great.—Birch.

2. Pliny, N. H., XV, 1.

3. Martial, XIV, 43.

4. Appul., Met., IV.

from "lux." Ennius, Lucretius and Vergil² seem always to have preferred the Greek terms to the Latin. In form these lamps were usually boat-shaped receptacles more or less large to contain oil, with one or more beaks or nozzles. The parts were 4:

1. The reservoir-infundibulum.
2. The circular top, discus, with rim, margo, sometimes ornamented.
3. The nozzle with a hole for the wick, called variously—rostrum,³ nasus, and myxus (μύξα).
4. The handle, a part not always found, called ansa or manubrium.

In the DISCUS was a small round hole through which oil was poured. This hole, in the case of bronze lamps, was often covered with a stopper, in the case of terra-cotta lamps this was seldom true.

The number of nozzles varied, and lamps were named accordingly—*monomyxus* with one; *dimyxus* or *bilychnis* with two; *trimyxus* with three; or *polymyxus* with more. As many as 30 nozzles have been found on a single lamp. Martial has a *lucerna polymyxus* say, "Tho' I light up whole feasts with my flame and have so many nozzles (*myrae*) I am called one lamp."⁴

Lamps for carrying were commonly provided with a ring handle, while those without a handle were intended to be stood on a candelabrum, or other support. Besides these others were provided with chains of bronze and hung from the arms of candelabra, from a hook, or from the ceiling. (See Plate I.)

Such a hanging lamp was called *Lucerna Pensilis*. One lamp in my possession (Plate II, fig. 2) was evidently designed to be hung from a nail.

The oil was vegetable, usually olive, though mineral oils are also mentioned,⁵ and the wick was made of tow or from the pith of various kinds of reeds and rushes. The wick was called *ellychnia*⁶ (ἐλλύχνηιον.) The rushes from which it was made were the *scirpus*,⁷ the *lychnitis* or *thryallis*,⁸ *verbascum*,⁹ *papyrus*.¹⁰ Tow¹¹ was also used, and even sulphur.¹²

Lamps were made of gold, silver, bronze, and bronze encrusted with gold, glass, lead (found on the Esquiline Hill in Rome¹³), stone (in the form of a house with columns and Ionic capitals), alabaster, amber, and clay.

It is my purpose in this paper to speak only of Roman terra-cotta lamps, exclusive of the Christian type.

1. Varro, L. L., V., 119.

2. Verg. Aen., I, 726.

3. Pliny, N. H., XXVIII, 163.

4. Martial, XIV, 41.

5. Pliny, N. H., XXXV, 15-51-179; XXIII, 4-41.

6. Pliny, XXIII, 4-41-84; XXVIII, 11-47-168; Vitruv., 8-1; Stat. S., 4-9-29.

7. Pliny, N. H., XVI, 178.

8. Pliny, N. H., XXV, 121.

9. Pliny, N. H., XXV, 10-73; XXVI, 4-11-23.

10. Pliny, N. H., XXVIII, 168.

11. Pliny, N. H., XIX, 17.

12. Pliny, N. H., XXXV, 175.

13. Scavi, 1891, pp. 299-302.

In answer to the question as to where these lamps have been found we must say first everywhere. For on almost every site where the excavator's spade has been thrust, they have been found. Yet that there were centers of manufacture is certain. With the exception of North Africa, where there was probably a factory, the chief sites were in Italy, namely, in Rome and vicinity; Campania; Cisalpine Gaul, especially at Mutina. Besides, there were doubtless many local factories, but they were small, poor, and but little known.

USES OF LAMPS

They were used to illuminate private houses, public buildings, streets and the forum on occasions of rejoicing, as offerings in temples, and in tombs.

1. Private houses. While the plan and construction of the Roman house admitted the largest possible amount of daylight into the chief living rooms, yet there were many portions that were almost deprived of all outside light. Here lamps were placed on brackets (a marble relief of a room containing a Roman mill, on a sarcophagus in the Vatican, shows a lamp supported in such a way), or suspended by chains or hung on a nail. Sometimes a terra-cotta support was made to which the lamps were fastened, such as an altar, with one, two or three lamps projecting from the side. Martial and other writers speak of lamps for the sleeping room,¹ the dining room, baths, etc.

2. That public buildings, such as theaters, and *thermæ*, and public places, such as streets and the forum were lighted at times of special rejoicing we know from many passages in Latin authors.

Domitian illuminated the amphitheatre² for hunts and gladiatorial contests; Caligula gave theatrical performances at night, and lighted up the "whole city."³ Alexander Severus used lamps in the public baths.⁴ Juvenal⁵ speaks of the use of lamps at the front doors of houses on festal days. Tertullian⁶ refers to their use at the time of political victories. Julius Cæsar's triumphal procession to the Capitol was lighted by 40 elephants bearing lights;⁷ Cleopatra used them in great numbers fastened to branches of trees at the time of her evening reception given in honor of Anthony;⁸ while a fragment of Lucilius⁹ speaks of the forum being thus lighted.

3. Temples. Lamps were used in temples both for illumination, and as votives in Greece and in Italy. Such votives have been found in Selinus, Sicily,¹⁰ while a very elaborate lighting scheme for the temple of Apollo on the Palatine Hill is described by Pliny.¹¹

4. Tombs. As in the temples so in tombs they served a double purpose. At the entrance they were used to furnish light and within

1. Martial, X, 38-7; XIV, 39. Moretum, 10.

2. Suet. Dom., 4.

3. Suet. Cal. 18; Tac. Ann., 14-21.

4. Lamprid. Vit., 24.

5. Juvenal, XII, 92.

6. Apol., 35.

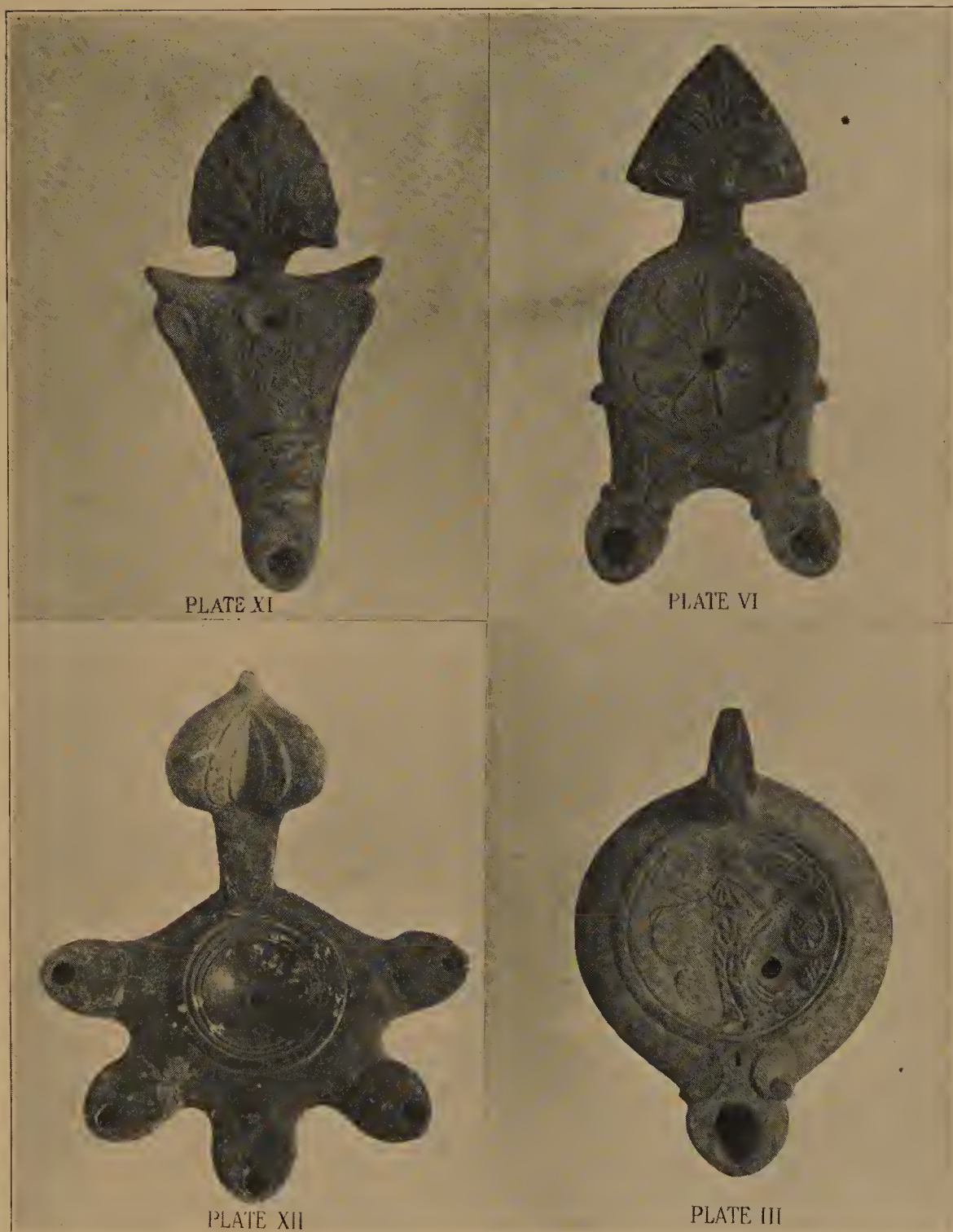
7. Suet., Caes., 37.

8. Plut. Ant., 26.

9. Lucil., Sat., III, 23.

10. Scavi, 1894 p. 205.

11. Pliny, N. H., XXXIV, 3, 8.



for votives. Large numbers have been found in tombs, and seem to have been put there for the same reason that vases and other such articles were. They were a part of the tomb furniture, were often supplied with oil, and were in some cases lighted at stated intervals. A tomb inscription in the British Museum directs the heirs of the dead one to place a lighted lamp in his tomb on the Kalends, Nones, and Ides of each month, and in another case, the heirs are directed to put oil in the lamp on the deceased's birthday anniversaries.* An inscription

*Walters, *History of Anc. Pottery*, Vol. II, p. 397.

from Salerno reads, "Whoever shall place a burning lamp in this tomb, may golden earth cover his ashes."¹ Still another inscription orders that a lamp be offered daily to the *manes* of the dead at public expense.² Petronius tells of the maid servant replenishing the oil in a lamp placed in a tomb as often as was required.³ All of these passages seem to look toward a perpetual light in the tombs, and so another inscription reads, "may the lamp always burn."⁴

Besides these uses, a few special ones may be noted. An approaching storm was foretold from the way a lamp burned. We read in Vergil, "Nor were even the maids, carding their nightly tasks, ignorant of the approaching storm; when they saw the oil sputter on the heated lamp, and foul fungous clots grow thick."⁵ The word I have translated lamp is *testa*, properly a sherd. Children also were named, according to Chrysostom, by giving names to lamps which were then lighted and allowed to burn out. The last to go out gave its name to the child.⁶ On a few lamps the figure of a bear has been found with the word "fear" in Greek. These may have been designed, when placed in tombs, to keep away any ravishers of the tomb.

Still another use of lamps, of a good deal of interest, is that of *strenæ*, or New Year's gifts. On the Kalends of January, beginning with the year 153 B. C., gifts were exchanged which consisted, in general, of sweetmeats of honey, figs, dates, sometimes gilded, money,—especially the bronze ass with the double head of Janus—branches of bay and palms⁷ Congratulatory expressions and good wishes were also at that time exchanged.⁸ The origin of this custom was the worship of the Sabine goddess Strenia, who corresponds to the Roman Salus. Strenia was the goddess who presided over New Year's gifts and had a shrine in Rome—*summa sacra via*.⁹ Near by was a grove sacred to her, from which were carried sacred branches in her honor to the Arx on the first day of each year. Augustus received *strenæ* on the Capitol, and realized from them a sum so large that he built shrines to certain deities. We know that Caligula condescended to take such gifts and to receive the *stipes*, and in such quantities that his new year's presents must have been not only of good omen but of great value. "He proclaimed that he, too, at the beginning of the year," says Suetonius, "would receive new year's gifts (*strenæ*) and stood in the vestibules of the temples on the Kalends of January to receive the coins (*stipes*) which a crowd of all classes showered before him from their hands and laps."¹⁰ Tiberius¹¹ forbade the exchange of gifts, though the custom was renewed after his death.

Lamps, decorated with a motto and with minute representations of the usual gifts, the ass, cakes, wreaths, etc., were thus given on Jan. 1. As yet, however, I find no Latin author who mentions these among

1. C. I. L., X, 633.

2. C. I. L., II, 2,102.

3. Pet. Sat., III, 77.

4. C. I. L., VI, 30102.

5. Verg. Georg., I, 390.

6. Homil. in Ep. ad Cor., I, 12.

7. Ovid, Fasti I, 185-190, Martial, VIII, 33, 11.

8. Ovid, Fasti, I, 175.

9. Varro, L. L., V, 47.

10. Suet., Calig., 42.

11. Suet., Tib., 34.

other gifts, though from the figures upon them and from the inscriptions such as "may the new year be prosperous for you," there can be no doubt that they were thus exchanged. (See plate III.) Further reference to the inscriptions on these lamps will be made later under the heading of inscriptions and trade marks upon lamps. (See page 181.)

TYPES OF LAMPS

We come now to the types of lamps. How to classify them has been a puzzle for some time. A sort of classification according to handles can be made, but that is not satisfactory, for the handle is not an essential part. The figures upon the lamps or their shapes are not a good basis for classification, and so an attempt has been made to group them according to their nozzles, not the length of the nozzle, as that varies with the size of the lamp, but according to its form. Fink of Munich devised this method, and Walters in his *History of Ancient Pottery* has followed him. I find myself entirely in accord with Fink's methods, and shall illustrate the types he makes from photographs made from specimens in my possession. One change I wish to make, however, and that is to add a fifth type to his four. As I believe that it is earlier in time than his class I, in order that references can be more easily made to his article I shall call this first class A, and then number the others 1 to 4, as Fink does.

TYPE A. This is the oldest type, and dates from 300-200 B. C. They are known as the Esquiline lamps, as they have been largely found on that hill. Dressel¹ says that they were made on a wheel not in a mould. They have usually a black, or at any rate a dark varnish. They very probably were imported from Campania. They have no ornaments or factory marks, with two exceptions,¹ but often have graffiti on the sides such as—"Noli me tangere;" "Ne attigas;" "Pone fur." A development from these rude lamps is shown in Plate IV. One of these is known as the Delphini-form (Plate IV, fig. 2) from a fin-like projection on the side. They have a square nozzle small ring handle, with simple or no decorations. The Delphini-form have usually a large number of globules on the top or a band of ivy leaves. They have been found in large numbers in North Africa, and were probably exported into Italy as far as to the middle of the peninsula. Their date is the I century B. C. (See also the one designed to hang on a nail, which has a similar nozzle—though much later, and is perhaps a Christian lamp representing rudely, in its shape, a fish. Plate II, fig. 2.)

TYPE I. These belong to the I century B. C. to the time of Augustus, have rounded nozzles, with volutes on both sides. They are with or without handles, generally of one nozzle, though some have two, and are decorated with a great variety of subjects. The handles, when found, are usually rings over which projects a triangular

¹ C. I. L., XV, part II.



PLATE V

or crescent-shaped part which easily lends itself to decoration. This decoration is very frequently an acanthus leaf or a palmette with sometimes two dolphins or two chickens picking up grain at the base. The crescent handles sometimes are adorned with a figure of Jove, and again the handle part, at times, has an abnormal development, as an arcade within which sits or stands a figure of Jove or other deity. (See plates V, VI, VII).

New Year's lamps belong to this type having a round nozzle and double volutes. They date from the time of Augustus to Caligula, as is known from the inscriptions. They are examples of the best form of lamps. (See plate III).

TYPE II. These have a pointed nozzle with volutes. The shape of the nozzle is ill-adapted to more than one on the same lamp, they are usually without handles, but are figured. They may be earlier than Type I, certainly not much later. (See plate VIII).

TYPE III. These are characterized by a grooved nozzle, which is somewhat elongated, without volutes, always made of

red brick-clay, unglazed, without handles, with an inscription on the under side in raised letters, and either without ornamentation or with masks of Pan on the discus.

These are of the I century of the Empire, beginning with the reign of Augustus. This is known for some have been found together with coins of M. Agrippa and Augustus,² and because they were in use in Pompeii at the time of its destruction in A. D. 79.³ They are the most practical type of all, having a sunken discus with good rim around, and in nearly every case with a groove running to the hole in the nozzle. By this means any overflow of oil was kept from spilling or from soiling the hands. On the edges of the discus are always to be found 2 or 3 projecting knobs, which Dressel⁴ thinks were for the attachment of chains for hanging. I cannot agree with this idea, as I have never been able to find a lamp whose knobs were perforated, and besides, when there are but two projections they are so placed that the lamp does not balance. It is more probable that they are bits of clay left protruding from the lower part of the lamp which were inserted in corresponding holes in the discus. This then was

1. C. I. L., XV, Nos. 6631, a and b.

2. C. I. L., XV, part 2.

3. Scavi, 1881, p. 300.

4. C. I. L., XV, part 2.

pinched over by the thumb and finger and formed, when baked, a fastening. This type is found in the northern part of Italy and Cisalpine Gaul, rarely south of Rome, and the center of manufacture may have been in Mutina. These are often spoken of as the "Fortis" lamps, because that signature is common. Another signature, "Pastor," rarely found, is shown in Plate IX, fig. 2.

TYPE IV. These have a plain, round or heart-shaped nozzle, without volutes, projecting very little from the body of the lamp. They are generally with ring handles and inscriptions, often with

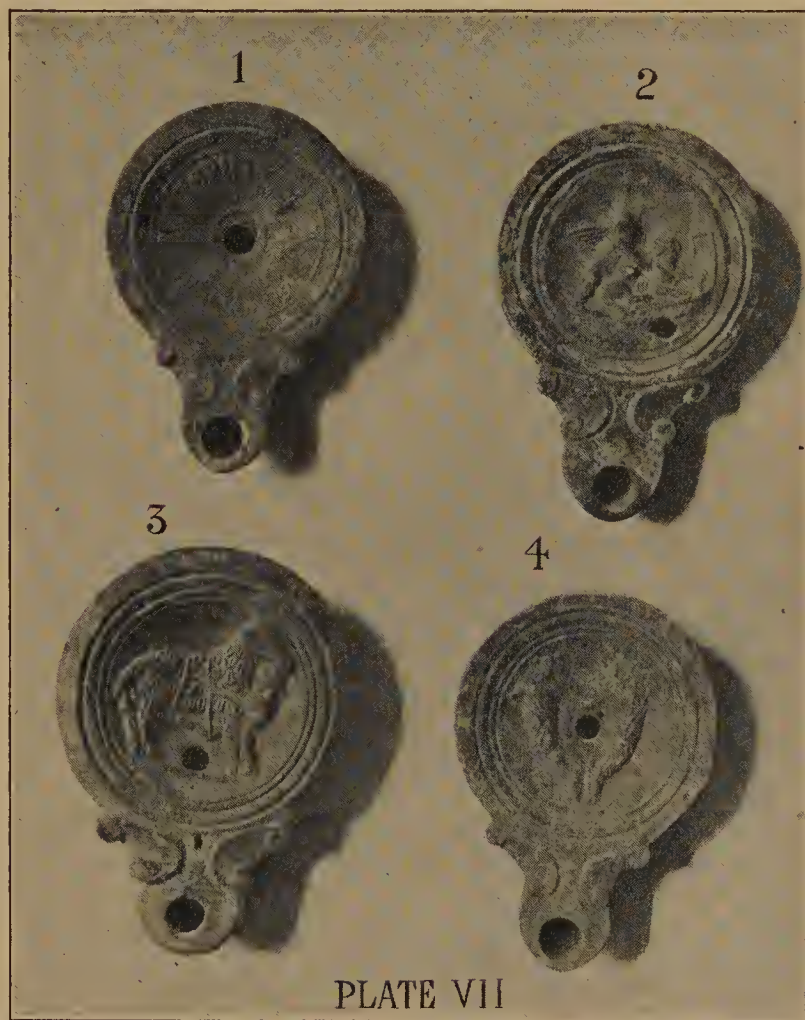


PLATE VII

an ivy pattern around the margin, and a figure on the discus. This type has been found in large numbers in Greek soil, and frequently in that case without handles. It is a rather late type, dating from the II century A. D. (See Plate X).

Besides these 5 classes, terra-cotta lamps often assumed fanciful forms, such as the human head or foot, masks, oxheads,¹ helmets, birds, dogs, horses, a camel reclining, elephant, tiger, rat, snail-shell, boat, etc:

1. See Plate XI.

2. Belonging to Latin Dept. Ripon College.

A fragment in the shape of a pigeon² shows that the tail was the handle, while a lamp was on either wing. The feathers are carefully worked out in the clay and were colored; traces of pink being still clearly seen. Boat-shaped lamps are somewhat common, having as high as 10 to 12 wick holes on each side. A very interesting lamp of this type is described by Walters,¹ and is to be seen in the British museum. He says, "It is not only in the shape of a boat, but is decorated with subjects referring to the pseudo-Egyptian cults characteristic of Rome in the late Republican and early imperial period. This lamp, which is no less than 20 in. long, and has numerous holes for wicks along the sides, was dredged up from the sea at Pozzuoli, where it may have originally been in the temple of Isis and Serapis."

Rectangular shaped lamps are less common than the round, but are found. Some, to be seen in the Museo Kircheriano at Rome, show a row of nozzles in a straight line as though one could buy lamps by the foot. These fanciful shapes are of late manufacture, dating, according to Birch, down to Constantine.

As we have said, the great majority of lamps had but one wick, and the light must have been rather feeble. Even when there were several wicks² the illumination could not have been brilliant. The necessity for many lamps is then apparent. That the odor and smoke from these might be very annoying is evident, and probably frequent attention had to be given to keep them trimmed. The reservoirs were never large, rarely measuring over 3 in. or 4 in. in diameter and 1 in. high. The oil would have to be replenished often, which could be easily poured in by the use of a *guttus* or small terra-cotta pitcher designed for this purpose. Juvenal speaks of the number of lamps at a school, the odor and the smoke, in a familiar passage in his seventh satire. He is speaking of the school-master, and says, "Lose not your whole reward for having smelt as many lamps as there were boys standing round you; while Horace was altogether discolored, and the foul smut clave to the well-thumbed Maro."³ To avoid the odor of the oil, perfumes were sometimes used.⁴ To prevent smoking the wicks would have to be snuffed and occasionally drawn out. In the case of bronze lamps we know that trimmers and sharp needles were used, for they have often been found. Some such device must have been used in the case of terra-cotta lamps also. Many of these, especially in types I and II, show a small hole through the clay just back of the nozzle. It has been suggested that this is where the needle was stuck when not in use. The supposition is not reasonable. In the first place, the holes are generally mere slits, often partly closed in the process of baking. Then, too, they are too near the flame. They would soon become hot and black with the smoke. Another theory that a small bit of wood was placed here to keep the upper and lower halves of the lamp apart before it was baked is more tenable.

1. *History of Anc. Pottery*, Vol. II, p. 403

2. See Plate XII.

3. Juvenal, *Sat.*, VII, 1. 225.

4. Martial, X, 38-39.

The clay from which lamps were made was usually red, though it was sometimes brownish or even yellow, depending upon the locality. Some are coated with a slip, and so belong to the lustrous pottery. As we have seen the early ones often had a coating of black varnish. An inscription which refers to the cost of a lamp may also, perhaps, refer to the quality of the clay. This reads, "*Emite lucernas colatas ab asse*,"¹ and may mean "buy well made lamps for an ass," as Marshall interprets COLATAS to refer to the quality of the material.

As has been said, the earliest undecorated types, found on the Esquiline, were made on the wheel. The decorated lamps had to be made differently. Some were made by hand, but probably nearly all in a mould. Such moulds have been found, and consisted of two parts—one for the body of the lamp and one for the top. The handle was probably added as a separate piece later. Probably the two parts were adjusted by mortices and tenons, as we have seen in type III, (Plate IX), though one frequently finds lamps which clearly show a lack of careful adjustment. (Plate II, fig. 3; plate X). A pattern lamp was made, and from this a mould was modelled out of finer and harder clay.² Such moulds have been found made of both terra-cotta and plaster. Into the mould the prepared clay was pressed by the fingers, the decorative figure made by a stamp, perhaps as the Arretine vases, while fancy borders of ivy, meander pattern, etc., may have been made by a wheel. Signatures in relief were made in the mould, while others were cut with a stylus before the lamp was baked. Important manufactories must have had a large number of moulds as foundries have to-day. More than 90 different stamps have been found with one name, L. CAECILIUS SAEVUS, 84 with the name C. OPPIUS RESTITUTUS, and so on. Doubtless moulds were exchanged, as we find the same pattern inscribed with different names.

After the two pieces were joined the parts were pressed together and the joints pared with a tool. These marks are often easily seen, and fragments show the roughness of the joints within. The hole for filling is usually carefully cut, as is also that for the wick. Baking was done by means of a slow fire in a kiln, where the lamps were set closely together. A mass of unbaked lamps, which had fallen together because of some accident, is shown in the Athens museum.

SUBJECTS REPRESENTED ON LAMPS

The number of subjects represented on lamps is enormous. It will be my purpose here only to mention general classes of subjects with very little attempt at detail. Walters³ gives an extensive list of subjects found upon lamps in the British museum alone, which covers 12 pages.

1. C. I. L., VIII, 10478 (1).

2. See Daremberg & Saglio Vol. III, p. 1334. *Walters-Hist of Anc. Pottery*, Vol. II, p. 405.

3. *Hist. of Anc. Pottery*, Vol. II, pp. 406 ff.

While sometimes excellent art is displayed, showing a real Greek spirit, still in general we have here a more every-day art, appealing to the common people; for doubtless makers selected subjects that would sell best. Very much as it is with the vases, we have many scenes of public and private life, and a great deal can be learned of these functions as well as of mythology and religion. As the earliest types come mainly from southern Italy, so in these we find the best work, and as we have already seen in class III the later types were less decorated.

We may make perhaps 7 or 8 general classes of subjects.

1. Gods. Both the Olympic deities and lesser ones. Jupiter, Juno, Apollo, Diana, Mercury, Minerva, Mars, Venus, Amor, Ceres, Neptune, Amphitrite, Tritons, and Nereids. Scylla, Pluto, Proserpine, Cereus, Bacchus, Satyrs, Silenus, Maenads. Aesculapius, Hygeia, Pan, and Echo. Castor and Pollux, Hercules, Bellerophon, Perseus, Centaurs, Amazons, etc. Then we find another kind of deities, such as Fortuna, Victoria, Roma, Luna, Ganymede, Cybele, Attys, Marsyas, the Sun. The Genius of Rome and of Augustus, Serapis, Isis, Anubis, Harpocrates.

2. Heroes and Heroic Legends. Labors of Hercules, of Theseus, and of Perseus. Judgment of Paris, Death of Hector, Achilles and the Body of Hector, Flight of Aeneas, Ulysses and the Sirens, Ulysses and Circe, Ulysses and Polyphemus, Palladium stolen by Ulysses and Diomedes, Sphinx and Oedipus, Leda and the Swan, Europa and the Bull, Endymion.

3. Historical and Literary subjects. An exceedingly interesting one of this class is Diogenes in the tub (*pithos*). A few busts of emperors and empresses are found. Romulus and Remus, Aesop's fables, such as the fox and the crow, etc.

4. Scenes from the circus, theater, and amphitheater. Gladiators in all positions, Beast fights, Races of bigas and quadrigas. One of these in the British museum shows the spina, metæ, vehicles, carceres, and seats for the spectators in a circus with a race of four-horse chariots. Actors, masks, hunting scenes, boat races, a soldier saluting an officer who is passing by on a horse, etc., etc.

5. There are numerous scenes erotic and obscene.

6. Animals, of all kinds, including four-footed wild and domestic beasts, birds, sea animals, and fish.

7. Inanimate objects. Vases, amphora, canthara, baskets of fruit, cornucopia, torches, plants, palms, etc.

8. Many are decorated simply with geometric patterns, circles, etc. Others with floral designs.¹ Some interesting subjects are shown in the illustrations to this article of lamps belonging to the writer or to the Latin Department of Ripon College. The wolf, cock, gladiator, masks, cornucopia are common. (Plates XIII; X fig. 1; VII fig. 4). The representation of a follower of Ulysses tied under a sheep (plate

1. See Daremburg & Saglio, Vol. III. *Lucernae*.



VII, fig. 3), and the slave grinding with a hand mill (plate VIII, fig. 1) are quite uncommon. Plate VII, fig. 2, shows a cupid by a fallen lion, which reclines on a couch with a high back. Plate V shows an unusually fine Medusa head, while the different geometric patterns are excellent. Plate II, fig. 3 shows a cover over the filling hole representing very crudely a theatrical mask. Lamps with terra-cotta covers still intact are very rare. Plate IV, fig. 1 undoubtedly had a cover very possibly of metal.

INSCRIPTIONS AND POTTERS' MARKS

Very many Roman lamps have inscriptions on them, either in raised letters or cut with a stylus on the bottom, the edge, or on the discus. Potters' signatures are always underneath, and the number of them is very large. Much less often we find inscriptions on the upper parts. These may be mentioned under 4 heads:

1. Words addressed by the lamp.
2. That which tells why or when the lamp was made.
3. Names of the figure.
4. Makers' names and trade marks.

1. Words addressed by the lamp. These are the expressions found on the Esquiline lamps referred to on page 175. Besides those already given we may add:

Non sum tua; Sotae sum, noli me tangere; Speri sum; N (e) Atiga (s) me, Gernuci sum.

Besides, we have such expressions as these—*Ave et vale*, hail and farewell; *Qui fecerit vivat et q (ui) emerit*—May he who made me and he who buys me prosper.

Bono q (ui) emerit—May he prosper who buys me.

2. Inscriptions which tell why and when lamps were made. Here we have those alluded to on pages 175 and 176, which are known as New Year's lamps. A figure of victory holds in her left hand a palm, and in her right a little shield, on which is inscribed these inscriptions:—*ANNUM NOUM FAUSTUM FELICEM MIH HIC*.¹ May the new year be prosperous and happy to me here.

OB CIVES SER (vatos)—For the preservation of the citizens (plate III).

FIDES PUBLICA—The public trust.

LUCER (na) PU (b) LICA—probably indicates that this lamp was especially made for some public function.

The inscriptions *SAECULI*, *SAECULO*, *SAECULARES*,² may possibly refer to the *Ludi Sæculares*, but may be similar in meaning to the inscription *SAEC (ulum) AU (reum) DOM (ini)*, The Golden Age of our Lord, which is found on a lamp from Antium.³

On others are *PALLAS VICTRIX*; *ARTEMIS EPHESIORUM*: these are votive lamps, and were deposited in temples.⁴

3. Names descriptive of the subject. Names of gladiators—*SABINUS*; *POPILLIUS*. Other subjects—*GANYMEDE*;⁵ *DIOGENES*;⁶ *AEN (eas)*, *AN (chises)*, *ASC (anius)*;⁷ *TITYRUS*.⁸

4. Potters' signatures and trade marks. These consist of names of makers, almost always in an abbreviated form, with sometimes a

1. C. I. L., XV, 6196 a.

2. C. I. L., XV, 6221.

3. C. I. L., X, 8053, 4.

Walters, *Hist. of Anc. Pottery*, Vol. II, p. 421.

4. See page 172.

5. C. I. L., XV, 6239.

6. C. I. L., XV, 6238.

7. C. I. L., XV, 6236.

8. C. I. L., XV, 6240.

special mark, upon the bottom of the lamp. The letters were usually cut in the soft clay by a stylus, though sometimes they were raised or made by a stamp or by the mould. The oldest signatures are found on the Esquiline lamps, but the large majority come on those of the empire.

A "Delphini-form" in the Musée Alaoui has a monogram of A and //.¹ Figure 4 of Plate I has a rosette on the underside. Figure 3, Plate IV, has an inscription MELLA scratched on the bottom, a form I have been unable to find either in the Corpus or in any other list. A single-letter may be used either above or below the name of the "*offinator*" or master workman. Again, these trade marks are sometimes symbols. On a "Fortis" lamp is found a wreath and palm branch beneath the name. On another with the name L. CAE SAR. and on one with the name C. IUN. BIT. are found two circles thus ⊙, one above and one below the inscription.

Other lamps have no names beneath, but simply marks; an ivy leaf, a branch, a human foot, a trident, or simply one letter, as L, I, H and many more are found.

Perhaps these marks were used to distinguish different series made in the same factory. In a similar way we find a lamp with the word PULCHER on the bottom near the nozzle, while in the center is the name L. FABRIC. MASC. Dressel interprets this as meaning that PULCHER was a workman in the shop of L. Fabricius Masculus. This last inscription is an illustration of what was nearly always true, that signatures were abbreviated. The full form would be "*Ex Officina*" with the name in the genitive case. So one lamp² reads EX OF AIACIS, that is, EX OFFICINA AIACIS.

In lamps from the middle of the II century to the age of Augustus names are written in the nominative or genitive case and only with a prænomen and gentile name, as, A. CORNELI; P. MUNATIUS. Sometimes only gentile names, as, AIMILI; or only a cognomen, as ANTEROS. Very rarely we find the word "*fecit*" or the abbreviation "*f*" with the nominative.³

In the period represented by type III nearly all signatures are cognomina and probably all in the genitive case, as, COMMUNIS; FORTIS; ATIMATI; STROBILI; very rarely PASTOR. Birch⁴ gives all of these as slave names.

In type IV we find either one (cognomen), two (nomen and cognomen), or three names. Examples are, C. IUN. BIT.; C. CLO. SUC.; C. OPPI. RES. Again names of women occur, as we know potteries were often owned by women. The abbreviations also vary in the form of the prænomen or cognomen, as we find both C. OPPI. RES. and L. OPPI. RES.; C. IUN. BIT. and C. IUN. ALEXIS or DRACO, etc.

1. Walters, Vol. II, p. 423.

2. C. I. L., XV, 6282.

3. C. I. L., XV, 6250.

4. Birch, *Hist. of Anc. Pottery*.

The variations may indicate different members of the same family who in turn had charge of the factory.

The following list, taken from Walters' work,¹ is perhaps full enough for our present purpose, tho' many more names are easily obtainable.²

- Annius Serapiodorus (ANNI SER) : Rome, Ostia.
 C. Atilius Vestalis (C. ATIL. VEST.) : Rome, Italy, Gaul, Britain.
 Atimetus : Italy, Gallia Narbonensis, Pannonia.
 L. Cæcilius Sævus (L. CÆ. SÆ.) : Rome, Southern Italy, Sicily, Sardinia, Gallia Narbonensis, Britain.
 Clodius Heliodorus (CLO. HEL) : Italy, Africa, Spain, Gaul.
 C. Clodius Successus (C. CLO. SUC.) : Rome, Gaul, Sardinia, Africa.
 Communis : Rome, Pompeii, Gallia Cisalpina, Pannonia.
 Crescens : Gaul, Pannonia.
 L. Fabricius Masculus (L. FABR. MASC.) : Rome, Gallia Cisalpina, Africa.
 Florentius (FLORENT) : Rome, Italy, Sicily, Tunis, Gaul, Germany, Britain.
 Fortis : Rome, Italy, Sicily, Dalmatia, Germany, Gaul, Britain.
 Gabinia : Italy, Sardinia, Africa, Gaul.
 L. Hospidius Crispus (L. HOS. CRI.) : Gaul.
 C. Julius Nicephorus (C. IULI. NICEP) : Italy, Gaul.
 C. Junius Alexis : Rome, Campania, Sicily, Sardinia, Africa.
 C. Junius Bito : Italy, Sicily, Gaul.
 C. Junius Draco : Rome, Italy, Sicily, Sardinia, Africa, Gallia Narbonensis.
 L. Mar. Mi. : Rome, Campania, Sicily, Spain, Gallia Cisalpina.
 L. Munatius (with various cognomina) : Rome, Africa.
 N. Nævius Luc (N. NÆV. LUC.) : Italy, Sardinia, Spain, Gaul.
 M. Novius Justus (M. NOV. IUST) : Rome, Naples, Sicily, Sardinia, Africa, Gallia Narbonensis.
 C. Oppius Restitutus (C. OPPI. RES) : Rome, Italy, Sicily, Sardinia, Africa, Gallia Narbonensis Cyprus.
 Passenus Augurinus (PAS. AUG.) : Italy, Gaul.
 Strobilus : Rome, Italy, Africa, Pannonia, Dalmatia, Gaul, Britain.
 Vibianus : Gaul, Pannonia.
 C. Viciri Agathopus (C. VICIRI AGAT.) : Italy, Sardinia, Gallia Cisalpina.

An examination of the list shows the geographical distribution of lamps. It will be noted that nearly all are found in Rome, while seldom is the same name found in the North and South of the empire. For example, the "Fortis" lamps, as has been said, were perhaps made in Mutina and they are not found at all in Africa and generally only in the northern part of Italy and in Gaul. On the other hand, those with the name Oppius Restitutus are rarely found in Gaul.

Some Roman lamps have Greek inscriptions, or signatures, but in general these come from the south of Italy and from Sicily and Cyprus. Dressel calls attention to the fact that nothing can be determined from the form of the letters. The old form of L, is used in the time of the empire, and this should be noted as a caution.

In conclusion. Mention has been made before of the article of Herr Fink in the *Muenchener Sitzungsberichte*. Constant use has been

1. *Hist. of Anc. Pottery*, Vol. II, pp. 425-426.

2. See also Daremberg & Saglio, art. *Lucerna* and *Fink* in *Sitzungsber. d. Muench. Akad.* 1900, pp. 689, 692 ff.

made in this paper of his study of Roman lamps in the Munich museum and mention must now be made, in a brief summing up, of his researches in an attempt to ascertain the chronological order and the geographical distribution of the various types and also to answer in a satisfactory way the question as to why it is that the same stamps do not appear in different classes.¹

The statements that follow are true for the museums at Munich, Berlin, and London (including the British museum, Guildhall and South Kensington).

Classes I, II, and IV are rich in decorations, while III has none or a mask of Pan.

Classes I and II are found often without inscriptions, while III and IV almost always have one. Class IV shows the greatest number of different inscriptions and class III the next largest number. Stamps of one class do not encroach on other classes. We find these exceptions:

FLORENT is in classes III and IV.

C. IUN. DRAC. is in classes I and IV.

C. OPPI. RES. is in classes II and IV.

To illustrate these points²:

In class I only, we find P. CESSIUS FELIX and L. MUNATIUS SUCCESSUS; in class II only, L. FABRICIUS MASCULUS; in class III only, ATIMETUS, FORTIS, PHOETASPUS and other single cognomina; in class IV, CLODIUS HELVIDIUS, C. JUNIUS BITUS, L. MUNATIUS THREPTUS, and C. CORNELIUS URSUS. Another interesting thing Fink notes is that certain signatures, such as L. CAECILIUS SAEVUS, BASSUS, Cerialis, SEXTUS EGNATIUS APRILIS and ROMANENSIS are not confined to one type of lamp, but in these cases it is to be noted that each type shows a variation in the signature, thus in class I, L. CAEC. SAE; in II, L. CAE. SAE; in III, L. CA. SAE; while in IV, L. CAE. SAE. occurs 141 times.

So we get SEX. EG. APR.; EG. APRILIS; EN. APRILIS and EN. APRILIS. As was said before (page 183), this may indicate work from the same factory, but at different periods and under different management, for example, father and son.

A study of the ornamentations seems to give these conclusions.

In class I Greek art is evidently preferred. Greek spirit is seen in the form, and in the choice of the subject. Representations of gods, myths, and scenes from comedies are numerous.

Class II Herr Fink thinks may be derived from I, but this seems uncertain. The subjects are Roman, not Greek, such as gladiators, battles, hunting scenes, etc.

1. Fink, p. 685 ff. Walters also makes a summary of Fink's conclusions in Vol. II, pp. 428-429.

2. These examples are taken from Walters' *History of Ancient Pottery*, Vol. II, p. 428, who in this way sums up Fink's statements.

In classes I and II we find references only to paganism, therefore they do not reach to the time of Christ. Examples of both classes III and IV show the Christian monogram and figures of the Good Shepherd carrying a lamb on His shoulders.

Fink also illustrates a type which seems to be a sort of connecting link between types III and IV. In this we find the small round nozzle of type IV, but also a channel from the nozzle to the interior, like type III. It seems to be an attempt to combine the good qualities of III with those of IV.

Evidence which comes from Regensburg shows that class III falls in the empire from the reign of Augustus to that of Hadrian, and, as we have noted, its use was largely confined to districts north of the Apennines.

Type IV is essentially Italian, but is found in the northern part of Italy and in Gaul. It comes within the Christian era.

EDWARD W. CLARK.

Ripon College, Wisconsin.



MUMMY FROM CHILI:—An interesting mummy has been reported as found in the Antonio copper mine, Sierra Atahualpa, Chili. That the man was killed while at work seems evident from the two stone hammers found near him. The copper oxide of the mine embalmed him. An age of 2,000 years has been assigned it by some.

ARCHÆOLOGICAL REMAINS IN A PREHISTORIC CHALK QUARRY IN SWEDEN

AT a meeting of the Anthropological Society at Stockholm, held on March 16, Dr. Olaf Holst gave an exceedingly interesting account of his discovery of a prehistoric mining industry at Tullstorp, in the vicinity of Malmo, province of Skane, southern Sweden. At this place there is a mass of chalk 3 miles long, 1000 feet wide and 100 or more feet in depth, which proves to be a glacial boulder, since it has glacial deposits both above and below it. This vast mass has been moved from some place in the bed of the Baltic Sea and transported many miles in a body, constituting probably the largest glacial boulder of which we have any knowledge. For many years several large companies have been engaged in quarrying this chalk for commercial purposes. At repeated intervals the workmen have produced the horns of deer and elk, which they said were found in the chalk. But so improbable were these stories that everybody disregarded them until the investigations of Dr. Holst, made in connection with his geological survey of the region. The mystery is now solved in a most interesting way and it turns out that prehistoric man had at a very early time learned the value of the flint nodules embosomed in the chalk, and had sunk numerous vertical shafts in it and excavated caverns to obtain the flint for the purpose of making stone implements. Subsequently these abandoned shafts became filled with earth, chalk and other material.

Upon close study of these shafts by Dr. Holst, it was found that "they consisted of old flint mines 2 to 5 meters deep, which, during the Stone age, or perhaps during even a later prehistoric time, had been inhabited by people who dug into the chalk mass in order to get down to the flint boulders imbedded at varying depths.

"It is to be noted that when the flint is taken out of the chalk in a moist condition it is more easily worked than when dry. That the aborigines of Skanes knew this can be inferred from the piles of rubbish found around the shafts, which show that the rough work on the flint was commenced immediately after it was taken out. It was evident that much of the rubbish had been thrown into the bottom of the shafts. Here were found implements for digging made of deer and elk horn.

"Dr. Holst further said that he had also examined in a preliminary way what appear to be large dwelling-places found in the immediate neighborhood of the mines. Here, among the numerous interesting remains, were found bones of cattle, hogs, and dogs; also chips, which give evidence that these dwelling-spots were inhabited by people during the Bronze or perhaps earlier Stone age.

"Some flat-cut slabs of sandstone, it was declared by Professor Montelius in a discussion that followed, have been, to all appear-

ances, used on the Island of Gottland in a training park to this day. Professor Montelius also spoke of the great interest this discovery by Dr. Holst had awakened, because now, for the first time, flint mines had been discovered in Sweden which in all essentials correspond to previous discoveries made in England and Belgium."



THE PALESTINE EXPLORATION FUND

FOR many years the late General Sir Charles Wilson studied the problem of the true site of the Holy Sepulchre, laying aside all prejudice and using the calm temper of the scientific man. So careful was he always to look impartially at all sides of a question that his own opinion was not easy to learn, but in a field where passionate assertion has prevailed, he very properly avoided all partizanship and was ever careful to uphold the standard of pure scholarship.

His studies on "Golgotha and the Holy Sepulchre" have been issued in a volume of 200 pages, edited by Sir Charles Watson. The whole question is studied most thoroughly. The meaning of the name Golgotha, the usual place of execution, Jerusalem topography at the time of the crucifixion, the Bible narrative, the position of other places named, the arguments for traditional sites, the attitude of early Christians, identifications in the time of Constantine, theories as to the tomb, the walls of Jerusalem,—these are the subjects of his chapters. Then 8 appendices deal with the views of early and late authors. The book is fully illustrated.

While the book will add greatly to the reader's general information, it is so cautious in its conclusions that it will not be likely to change the preconceived views of anyone. But it will certainly tend to cause broader and calmer consideration of a difficult problem and will so serve an important use. It is interesting to see how fairly General Gordon's emotional views are treated by one so wholly different in form of mind, and we are shown Gordon's fanciful drawing of a human skeleton, with the head at the skull hill, the base of the backbone at the temple site, and the foot at the Pool of Siloam. Gordon's mind was as enthusiastic as a crusader's and as devoid of rational science, and the so-called "Tomb of Christ" pointed out by him and afterwards bought by his friends at a great price, will not bear the test of Chronology.

THEODORE F. WRIGHT.

EDITORIAL NOTES

INCORPORATION OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA:—On May 21 the House of Representatives passed a bill, sent to them by the Senate, incorporating the Archæological Institute of America as a national society.

A WINGED HEAD FROM ARMENIA.—The *London Sphere* prints in the issue of May 5 a picture of a metal figure recovered from an Armenian excavation. It is a human head with wings, bearing a striking resemblance to the Egyptian winged disc.

ANCIENT CIVILIZATION IN THE SAHARA:—Judging from the results of the excavations of the great tombs in the Sahara, M. E. F. Gautier concludes that a Neolithic Soudanese civilization extended over the Sahara, almost to the boundaries of Algeria. Relics of the Berber invasion are superimposed upon these traces of this early civilization.

AGE OF THE RHODESIAN RUINS:—Since our May issue there has come to our notice a more recent estimate of the age of these ruins. Mr. Randall MacIver has made investigations which lead him to assign to them a much later date than had been done previously. At Dhlo-Dhlo he cut a trench below the cement floor of a hut, which was intact, and, among other objects, found fragments of Nankin china. Experts fix the date when Nankin china was manufactured and imported as the XVI century A. D. These facts have convinced Mr. MacIver that the Rhodesian ruins date from mediæval or post-mediæval times, and were built by an African race much like the modern natives.

ANCIENT JEWELS IN BELGIUM:—In 1880 some jewels of barbarian origin were found in French tombs uncovered in southern Belgium, near Chimay.

These have been given to the Royal Museum at Brussels. This collection consists of 6 pieces. First, a bronze ring, ornamented with a gem. The stone has, carved in a hollow, a fantastic animal, which seems to be seizing the end of its tail. This design is common in rings found in many places. Next, two ornamental bronze buttons from a scabbard, each bearing, in a hollow, a picture representing, at first sight, a tree-like plant. But it may possibly be identified with a degenerate form of the twisted serpent ornamentation of Scandinavian origin. Then there is a bronze bracelet, open, and much thicker at the

ends than in the middle. The ends are ornamented with carvings. Last is a pair of ear-rings, made of bronze wire, each with a pendant of the same material.

INDIAN TRADITIONS OF VOLCANIC ACTION IN MEXICO:—According to Indian traditions collected by Padre Hunt-Cortez many of the so-called extinct volcanoes of Mexico have been active within the Christian Era. In the year "*cetecpatl*" or "one flint" which corresponds to the year 76 A. D., Ajusco and Xictli were in full eruption, belching forth fire and overwhelming towns with seas of lava. These same badly behaved mountains, standing between this Valley [of Mexico] and the Valley of Morelos, where lies, on its promontory, Cuernavaca, were again in eruption in the year 1114. Ajusco and Xictli are supposed to be extinct." But can we be certain of this, since once, after a period of quietude covering 1038 years, they became active?

Popocatepetl (*popoca*, to smoke, and *tepetl*, mountain) is still hot below the surface. In the 28th year of the founding of the city of Mexico, then called Tenochtitlan, the city was much injured by severe seismic disturbances and showers of ashes from the volcano. This was in the year "*nahui calli*," "four houses," or, as we know it, 1354. A year later, Cerro Partido or Split Hill began to be active, and its summit was riven asunder.

About 30 years before the Conquistadores arrived, that is in 1489, Ixtaccihuatl, the White Woman, made trouble. Earthquakes, considered as being caused by this mountain, meteorological phenomena and horrible phantoms presaging evils were observed, and were later considered as foretelling the Conquest.

"Xico, a sunken volcano in the bed of Lake Chalco, broke into full eruption in the year 1170 and vast columns of black smoke rose to the heavens, darkening the valley."

NEW EVIDENCE OF HUMAN REMAINS IN THE AURIFEROUS GRAVELS OF OREGON:—In addition to the evidence already gathered in regard to the early presence of man on the Pacific coast, we are glad to note Mr. J. F. Kemp's report* of mortars and pestles found near Waldo, Josephine County, Oregon.

This town is "situated on the stage line from Grants Pass on the Southern Pacific Railroad, 100 miles south of west to Crescent City on the coast and is 40 miles from Grants Pass."

The gravels at Waldo were early worked for the ore, and it was discovered to be rich in the precious metals as far back as 1853, when the gravels were worked "in the bed of a small stream which heads up in the ancient gravels of what must once have been a large river." The old gravels are now on top of a ridge, and have thus remained, while the former banks have been removed by erosion. "The bed-

rock, as exposed in the placer mines, is chiefly serpentine, but in one place the rim-rock is fossiliferous sandstone, which has been studied and determined by J. S. Diller." The boulders are eruptive. In the gravels, pestles appear often enough to cause no surprise. We give the following instances, however, as being specially interesting:—

During the night shift two miners, H. M. Pfefferly and D. W. Yarbrough, found two mortars and one or two pestles, which they carefully laid aside, and in the morning brought them to Mr. W. J. Wimer, the manager and part owner of the mine. This gentleman carefully recorded the facts as presented by the men and added his own statement. The question was asked if they were found in such a position as would warrant the supposition that they might have reached the point by the caving in of the gravels above.

"It was found in 1902 firmly embedded in a blue cement gravel (the pay channel) 58 ft. from the surface. They had to resort to picks to get it out and the bed or hole out of which they pulled it remained, showing its perfect mould." In the morning "it was still packed tightly to its very rim with blue cement gravel. With a sharp pick I carefully picked the gravel loose, so that I could clean it." After washing "the detritus, I got 8 pretty large colors of gold." "The mortar is about 12 in. high by 9 in. across, and is made of the hardest granite."

"The other mortar is what Colonel Draper terms a quartz mortar, having a saucer-like cavity on its top." "This mortar was probably about 10 ft. under the surface," and "300 yards from the other," although found in 1901. "The pestles were discovered with it; they were in pay dirt."

IMPORTANT DISCOVERIES BY DR. PETRIE:—The Egyptian Research Account, the new English Egyptological Society of which I wrote in RECORDS OF THE PAST last November, has made important historical and interesting archæological discoveries in the Delta under the personal direction of Professor W. M. F. Petrie, who now devotes his time entirely to the work of this Society. His object is actual discovery *in situ* and not clearing of sites and copying of inscriptions, however useful that line of archæological work may be. Dr. Petrie writes to me of "our discovery of the actual town and temple site of Onias. It is (he says) a very clear case of all the known requirements being satisfied, as to date, place, conditions and building."

The city of Onias, it will be remembered, was a Jewish settlement in Egypt, named after the high-priest of that name, who took refuge in Egypt from the tumults in Jerusalem and the profanation of the temple and of the worship held in it. He erected "the Temple of Onias" in the city, which became famous as a shrine where the

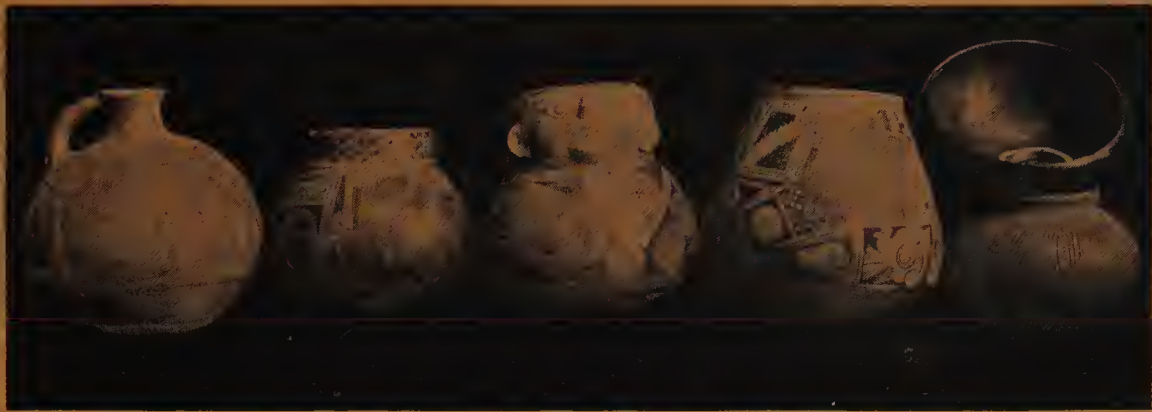
(*Science, March 16, 1906.)

Jews might witness the religious observances of the orthodox faith and ritual. "The Mound of the Jews," or *Tel-el-Yehudiyeh*, as the Arabs call it, was inspected by Linant in 1825, and Prof. Hayter Lewis described the mounds in a paper read before the Society of Biblical Archæology (Vol. VII, part 2). Greville Chester explored the mounds and brought away some relics now in the British Museum. In 1870 Brugsch-Bey did some excavation work at one of the mounds and secured various objects of interest for the museum in Cairo. In 1887 Dr. Naville endeavored to settle the problem of the site and temple, but, however interesting his efforts, as described by him in the Egypt Exploration Fund memoir (No. VII), he truly remarks: "I cut through the mud platform on which the alabaster pavement had stood, in hope that I should reach earlier constructions, but without any result. It was the same with several attempts made in other parts of the mound; they brought no monuments to light." Nor did he find any remains of the Hyksos period or any traces of the warlike XVIII dynasty. "It is possible that the site may go as far back as the XII dynasty," Naville adds.

Dr. Petrie's letter to me goes on to say: "We have a remarkable historical subject here in clearing the Hyksos cemetery and the great fort of the Hyksos. The tombs contain scarabs of the Hyksos age, and we have got at this place scarabs of Khyam, Apepi II and of Skhanra, 3 foreign kings who were probably all Hyksos. There can be no doubt of the importance of this place under the Shepherd kings. Now on examining the great fortification of the town I find that it is curved and irregular in outline, unlike the Egyptian plan; and it was an immense earthwork with a sloping face, and no gateway, but a long sloping causeway leading up over the earth bank. Evidently the builders did not know of brick or stone work, all their fighting was with bow and arrow, and they could not build a gateway. But about a generation or two later they remodeled all their fortifications and put an immense stone wall about their earthwork, having learned such defence from the Egyptians. This agrees exactly with what we might expect to find done by the Hyksos. We have at last touched their work, and learn that they were archers who used great earth defences, like the Turkomans in modern times."

Professor Petrie describes other important discoveries, but I forbear to quote him, as he hopes to send RECORDS OF THE PAST an account of Onias with illustrations later on. I add, however, one absorbingly interesting item: "One inscription makes it very probable that this (*Tell-el-Retabeh*) was the city Ramases (*Exodus* i: 11), and the position leaves no other site possible for that city." Naville delighted more than the archæological world, when, in 1883, he identified Pithom, and if Petrie has located the site of the other city built by the Israelites in bondage, he will receive the appreciative thanks of tens of thousands of Jews and Christians.

WILLIAM COPLEY WINSLOW.



PART VII



PROF. G. FREDERICK WRIGHT,
D. D., LL. D., Editor



MR. FREDERICK BENNETT WRIGHT,
Assistant Editor

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JULY 1906

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CEDARS OF LEBANON, GENERAL VIEW OF THE GROVE

RECORDS ^{OF} THE PAST

VOL. V



PART VII

JULY, 1906



THE CEDARS OF LEBANON

MANY of the most instructive and pathetic "records of the past" anywhere to be found, occur among the last remnants of various decaying species, both of the animal and the vegetable world. In America the buffalo, and the Sequoia Gigantea are conspicuous examples of widespread species that are now dwindled to insignificant proportions. Only by strenuous efforts of the United States Government can even the last remnant of the buffalo be preserved for a short time longer, while the forests of gigantic red woods in California seem doomed to rapid extinction. The Dodo of Australia has already ceased to be a living animal, and can now be studied only in its scanty remains. The Cedars of Lebanon belong to this same class of nearly, if not quite, extinguished species. But the few remnants which still are accessible have double interest because of their history, their central location, and future possibilities.

The Cedars of Lebanon have been made most familiar by references to them in the Bible. David is said to have built him a house of cedar in Jerusalem (2 Sam. V, 2). Through the coöperation of Hiram, King of Tyre, Solomon brought great rafts of cedars from Lebanon to Joppa and carried them up the steep mountain slope to Jerusalem for the first temple (1 Kings, V, 6), while in the building of the second temple under Ezra and Nehemiah resort was had to the same source for material (Ezra, III, 7). Ezekiel also refers to the use of cedar for ship-building, (Ezek. XXVII, 5) and Isaiah for

the manufacture of idols, (Is. XLIV, 14). At a still earlier period the Psalmist refers to the cedars as the ornament of Lebanon, and one of the great glories of God's creative power and wisdom, (Ps. XCII, 12, & CIV, 16). Among classical writers, Theophrastus speaks of the "admirable Cedars of Lebanon," and the naturalist, Pliny, calls the species "*Cedrus Magna*."



A BRANCH OF CEDAR CONES

The species is characterized by its evergreen boughs, its large cones, resembling goose eggs, both in shape and size, the horizontal "roof-like spreading of its branches" rivalling in this respect the oak. The wood is light colored and soft, somewhat like that of what is known in America as "white cedar," (*arbor vitae*), but it does not have the aromatic perfume of that tree. It should be said, however, that the cedar of Lebanon is not properly a species, but only one of

three varieties, the others of which flourish, one in India and the other in Algeria. The Indian variety grows to great height and size, attaining sometimes 250 ft. in height and 39 ft. in circumference. In the Sanscrit, the sacred literature of India, it is referred to as the "wood of the gods." The variety growing in Algeria is, on the other hand, much smaller than that of Lebanon, and has shorter boughs and smaller cones. It should also be said that a variety of cedar closely



THE GIANT OF THE FOREST

resembling that of Lebanon is still to be found in the ravines of the Taurus and interspersed with the black firs of many of the mountains of Asia Minor north of the Mediterranean.

All this indicates the vitality of the species, and its capability of spreading again over the flanks of Lebanon, and reclothing with verdure this magnificent mountain mass. The same capability is also

shown in the existence of several other groups of trees beside the famous one of which we are to give an account. These other groups consist of smaller trees, which maintain an existence in the face of great obstacles. Sheep and cattle have free range among them and eat the incipient trees before they have attained any respectable size, while the inhabitants trim off the branches for wood until they present scarcely any resemblance to their natural development. Only the improvidence of man endangers the continued existence of the species in Lebanon.

At the same time it is the providence of man which is preserving the noblest of the groups. This is found near the head of the Kadisha river, which enters the sea at Tripolis, about 30 miles north of Beyrout, and rises in the highest summit of the range, known as Darhel-Kodib, which is more than 10,000 ft. above the sea. As the crow flies the cedars are not more than 25 miles from the Mediterranean, but they are 6,300 ft. above it. It is probable that it was from the lower part of this valley that Hiram obtained the large trees which he floated to Joppa. When one sees the depth and precipitousness of the gorge cut by the Kadisha, he can but wonder how the timber was ever carried down to sea level.

Many years ago Sir Joseph Hooker, in a most interesting treatise upon the migration of northern plants southward, spoke of the Cedars of Lebanon as growing upon a terminal moraine, thus furnishing additional evidence of the influence of the glacial period in securing the present singular distribution of northern plants over southern latitudes. Like so many other northern plants the cedar fled before the advancing ice, maintaining its existence upon the mountain tops until it reached congenial conditions in India, and even crossed the Straits of Gibraltar and found a home in the mountains of northern Africa. It was to verify this observation of the distinguished botanist of Great Britain, and to study more carefully the significance of the interesting fact, that I turned aside for a week last October, to visit the region and view it in all its connections.

The principal grove of cedars consists of about 400 trees growing, as already said, in an amphitheater at the head of the Kadisha river at an elevation of 6,300 ft. above the sea and only 25 miles in a direct line from it. The rim of the amphitheater, however, rises about 4,000 ft. higher, bounding a small plateau of a few miles square, which constitutes the highest summit of the Lebanon range.

A visit to the Cedars is now made comparatively easy by the construction of a well-graded carriage road from Tripolis up the winding course of the Kadisha to Baherreh, a picturesque village overlooking the deep and precipitous upper part of the river gorge 5,300 ft. above the sea, and 5 miles from the grove. This 5 miles, however, must be made on horse-back up a steep zigzag path, very trying to delicate nerves. In order, however, to get a more comprehensive view of the situation, we took the longer and more arduous path, requiring 3 days of horse-back riding from Beyrout diagonally



SUMMIT OF LEBANON FROM THE CEDARS, SHOWING DEPRESSION DOWN WHICH THE GLACIER CAME, UPPER PART OF MORAINE IN FOREGROUND

across the flanks of the mountain, and then crossed over the highest ridge of the range, emerging in Coele-Syria in the vicinity of Baalbek, thus obtaining complete geological sections of the mountain range.

The Lebanon mountains were produced by a comparatively simple fold of cretaceous strata of great thickness. These strata consist at the bottom of about 3,000 ft. of limestone, succeeded by 500 or 600 ft. of reddish sandstone, capped by about 4,000 ft. of an upper limestone. The folding has been produced on so magnificent a scale that the upper limestone, upon the summit of the range, remained horizontal, so that in the amphitheater surrounding the cedars one can see 3,000 ft. of horizontal beds of limestone rising immediately above him. Upon the flanks of the mountain, however, erosion had proceeded so far as to lay bare in places sections of both the middle stratum of red sandstone and the deeply buried beds of lower limestone. It was interesting to observe in these deeply eroded beds the indications of great volcanic activity during the middle stages of the range's formation. These were evident in extensive interbedded masses of basalt, and in one case, half way up the mountain side, of an irregular mass of rock consisting of cemented volcanic ash indicating the close proximity to a volcanic crater.

A manifest inference from these and various other observations is that the elevation of this range is, geologically speaking, com-

paratively recent. Otherwise the horizontal strata upon the summit of the range would have been removed by the active eroding agencies which are at work. This inference is also confirmed by the discovery upon the eastern flank of the mountain of limited deposits of soft rock containing tertiary shells, showing that the most of the elevation has taken place since the middle of the tertiary period, that is, as geologists now reckon time, perhaps not over 1,000,000 years ago.

But the moraine upon which the cedars are growing is of much more recent date, probably not more than 10,000 or 15,000 years old. For, in the first place, it was not formed until after the Kadisha river had nearly accomplished the erosion of its present gorge. The ice then came down from the summit plateau already mentioned, into the



SNOW BANK AT THE END OF SUMMER IN THE LEBANON MOUNTAINS

head of the amphitheater, and pushed its way along some 5 or 6 miles, continuing there long enough to build up a moraine 1,000 ft. thick, completely spanning a valley 3 miles in width. Of course the moraine consists wholly of the limestone debris and hence is readily cemented together into a compact mass presenting the appearance of a soft conglomerate rock. The bold precipitous face of this moraine as one approaches it from the west attracts the attention 5 miles away and grows in impressiveness until one reaches its foot and finds his progress so impeded that he must turn at right angles to slowly and painfully work his way around its edge. From the middle of the front, however, there issues a stream of water of considerable size which has eroded a V-shaped channel the apex of which is a mile or more back of the original front, thus affording one of the best possible op-

portunities for studying the characteristics of glacial deposits. It is from the comparatively small amount of this erosion that we may safely draw the conclusion that the force has not been at work under present conditions for much more than 10,000 years.

Secondly, a similar inference can be drawn from the small amount of talus which has accumulated at the base of the cliffs surrounding the upper part of the amphitheater into which the ice descended. Here there is an area about 2 miles long and $1\frac{1}{2}$ miles wide back of the moraine, which is 100 or 200 ft. lower than the moraine—a depression which was originally filled with comparatively clear ice which, when it melted away, did not contain sufficient debris to fill the space it had occupied. We have no means of accurately calculating the



LOOKING FROM THE TOP OF LEBANON MOUNTAINS OVER THE DEPRESSION
BACK OF THE MORAINE

rate at which talus would accumulate at the base of these cliffs, but the strikingly small amount to be seen here as compared with that which we observed in other places along the base of the upper limestones would indicate a comparatively short period for the post-glacial exposure of the cliffs—a period which would closely correspond to that indicated by the erosion at the front of the moraine.

Thirdly, the surface of the moraine upon which the cedars are growing, covering an area of several square miles has all the characteristics of a recent formation. It is what is called a “knoll and bowl” formation—the bowls being nothing else than dry “kettle holes.” But the limited extent to which the “bowls” have been filled up by wash from the “knolls” indicates here, as it does in the glaciated



CEDARS, LOOKING TOWARDS THE SUMMIT OF LEBANON

region in Europe and America, that the leveling forces of wind and water have been freely at work for only a few thousand years.

So much for the moraine upon which the cedars are growing. As to the cedars themselves, the group is evidently very old. The trees are all large, some of them being 80 ft. in height and one having a circumference of 47 ft., may well have an age of 1,500 or 2,000 years.

When one witnesses the wholesale destruction over the general mountain side he cannot help having a curiosity to know why this group has been preserved from destruction. A probable clue is given in the name of the stream, Kadisha, which rises in the moraine. This word is the Hebrew for "holy." This grove has been preserved because of its sacred character. We have in its preservation a remnant of the idolatrous practices prevalent among the Canaanites with which the children of Israel came into contact during the earlier period of their occupation of Palestine. The grove is now protected by a neatly built, high stone wall, and, viewed from every point stands out like an oasis in a desert, presenting a striking contrast to the general barrenness surrounding it. The natives will tell you that the grove is sacred because it "was planted by Jesus Christ"—a belief which gets a semblance of justification from a passage in the 104th Psalm which refers "to the Cedars of Lebanon which the Lord has planted."

The Cedars of Lebanon are but one of many relics bearing testimony to the very early practice in the history of mankind of setting aside conspicuous places as sacred inclosures for the worship of the



VIEW OF THE CEDARS SHOWING THE MORAINE

Diety. On both flanks of Lebanon we encountered the ruins of ancient temples, in every case erected on conspicuous sites and amidst scenery of rare beauty and impressiveness. One was upon a summit near the famous Natural Bridge half way up the mountain side, which commanded a view of Beyrout and of a long stretch of the seashore northward. Another was at the head of the Adonis river where it bursts in great volume and fully formed, from the base of the upper limestone which crowns the summit on the east. Here from time immemorial Adonis had been worshipped with lascivious rites, until Constantine in the fervor of his recent conversion to Christianity, decreed its destruction. On the eastern side of the range at Zammunneh about half way to Baalbek we encountered again the foundations of an immense Phœnecian temple concerning which but little has ever been written. It is nearly across the mountain opposite the temple of Adonis, and like that it was located where an immense stream of water gushes from the mountain side and amidst most impressive scenery. Of Baalbek near by, it is not necessary to speak, nor is this the place to give details concerning the ruins of various other smaller temples which are found in this locality.

As one stands upon the summit of Lebanon 4,000 ft. above the cedars and looks down upon this ancient grove and upon the still more ancient moraine upon which it is growing, and his eye takes in the sites of these ancient temples on the western flank and the vast expanse of the Mediterranean beyond, and, turning to the east, sees the plain of Cœle-Syria spread out before him with the distant ruins of Baalbek in the center, he can but feel as never before the

force of the words of Holy Writ "all flesh is grass and as the flower of the field it perisheth." Over this field in successive waves have come and gone all the great nations of antiquity. Here are the relics of the Assyrian, the Babylonian, the Egyptian, the Phoenician, the Grecian, the Roman, the Moslem and the Crusader. Each has done his part to destroy its noble covering of forest and to add to the desolation wrought by his predecessor. If the process could be reversed, and the greed of man restrained, and proper protection be given to the reforestation of the region, the Cedars of Lebanon might yet become, as in the days of the Psalmist, the glory of that whole mountain system. It is man who has wrought the desolation and practically destroyed those groves which the poet has fittingly called "God's first temples." When shall he restore them again?

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.



THE BIRTH OF VENUS: A GREEK RELIEF AND A RENAISSANCE PAINTING *

THE object of this paper is to place before you in their historical setting a Greek relief which has been interpreted as the Birth of Aphrodite, and an Italian Renaissance painting which has for its subject the same myth. Viewed simply as works of art, these are not at all more interesting than many other productions of their respective periods. But if studied as embodiments in artistic form of the temper of the ages which produced them, they assume special importance. I hope that you will see in the relief something of the spirit which, better expressed in a later period when "hand and brain went better paired," made Greek sculpture the model for all time in plastic art. And I think that you will recognize in the Italian painting an expression of the general attitude of the latter half of the XV century toward the revived study of the literature and art of Greece and Rome.

If the approximate date assigned to the relief by Professor Petersen, until recently of the German Archæological Institute in Rome, is to be accepted, it was made about 470 B. C. The great fear of invasion by the Persians and of the calamities which would have resulted from Persian victories had passed. Marathon and Salamis had been fought. The Greeks had become united in feelings and aspirations as never could have been possible had they not been forced to resist together the common danger. Language and religion had been strong factors to bind the states together even before the struggle against the invaders, and now the recognition of the fact that they

*Read at the Classical Conference at Ann Arbor, Michigan, March 30, 1906.

owed their preservation to united efforts was added as another influence to hold them to a consciousness of their kinship.

And since the fear of invasion was passed they were left to develop their political institutions, literature and art, free from dread from without. Epic poetry had long ago put forth its best efforts; Lyric poetry was approaching its bloom in Pindar; Tragedy was not yet at its height, though Aeschylus had already produced plays; Sophocles was 25 years of age, and Euripides a boy of 10. In sculpture the archaic work was just passing over to the freer, more perfect types of the best period. The stiff forms and staring eyes and expressionless faces of the archaic figures typified by the Gorgon from the metope of Selinus, who smiles even though her head is being cut off, and by the Apollo, of Tenea in the Museum at Munich, who stands as stiff as if related to the jointless creatures of Germany of which Cæsar tells us,—these have long since been surpassed. So also advance has been made over the later and better pediment figures from the temple at Aegina, figures which Professor Tarbell in his *History of Greek Art* assigns to about 480 B. C. These are not so unnaturally stiff as the statutes of the earlier period, and one of them, the dying warrior, fallen on his side, still propped up by his shield, is natural enough in expression to appear to be taking seriously the matter of dying. But at 470, the supposed date of our relief, we have reached a period which succeeded all these works. According to Professor Tarbell it is the period of the originals from which we have the Harmodius and Aristogiton of the museum in Naples; the Discobolos after Myron of the Vatican, and the Satyr of the Lateran; the Thorn Extractor of the Conservatori, and other pieces about which I could not speak from personal knowledge. The great age ushered in by Phidias had not yet come, though there were promises of it. Thus stated so briefly as to be merely suggestive we have the setting in which appears the Birth of Aphrodite of our relief.

The relief was discovered at Rome in the summer of 1887. It lay about 5 ft. below the surface in the space bounded by the Vie Boncompagni, Abbruzzi, and Piedmonte, just outside of, and only a few rods distant from the course of the Servian Wall in its most northern part.*

The monument upon the principal face of which this relief is cut, consists of three faces formed of one piece of marble. The sides are cut at right angles to the main face, and the three walls thus form a kind of inclosure, with the fourth side lacking. The large face measures a little more than 4 ft. 6 in. in length, and slightly less than 3 ft. in height. The upper part of this side originally sloped upward from each corner to a height of about 3 ft. 6 in. from the base.

While archæologists who have studied the marble are not agreed concerning the use that was originally made of it, no one has offered a more plausible theory than that of Professor Petersen in the article

*See the article by Professor F. Petersen in the *Mittheilungen des Kaiserlich Deutschen Archæologischen Institute*, Vol. VII (1892) pp. 32-80.

to which reference has been made. He believes the inclosure to have been a throne for the support of a statue, and thinks that the statue was one of Aphrodite. This theory accords well with the interpretation of the principal relief as a representation of the birth of Aphrodite, an interpretation for which I am indebted to the article by Petersen and to a lecture before the marble by so critical and appreciative an authority as Professor Richard Norton, Director of the American School of Classical Studies in Rome. Furthermore, the reliefs on the smaller faces may be explained satisfactorily in accordance with this understanding of the chief relief; lack of time, however, forbids any description of them.*

There are other interesting questions which arise in connection with our relief, but I can no more than allude to them. Let us for the present accept the theory that 3 marble faces formed a throne for the support of some large statute, and let the statue have been one of Aphrodite; for if the relief in front represents the birth of the goddess from the sea, then the most appropriate figure to occupy the throne would be hers. Next the inquiry arises, whence came the throne? Naturally, we surmise, from some temple of Venus in or near Rome. And suitably enough the temple of Venus Erycina, situated about 165 yards north and slightly west of the Porta Collina of the Servian Wall, lay only a little over 400 yards east of the place where the throne was discovered.†

This temple was dedicated 181 B. C. Then we must inquire whether the relief was executed at Rome or brought thither from elsewhere. If it was made at Rome, by whom was it made? Visconti believes that the work was done in Rome by a Greek sculptor either a few years before the time of the Empire or in its first years. If this were true the reliefs would need to be considered copies of much older originals, for Visconti himself says that the style of the sculpture is archaic, but archaic ready to pass over to the freer style. Petersen suggests that the throne was brought to Rome from that site which Wissova calls the source for the Italian worship of the Greek Aphrodite, Mt. Eryx in Sicily; he even goes farther and proves to his own satisfaction that a certain archaic head of Aphrodite, also in the Terme Museum at Rome, in which museum the throne is preserved, belonged to the acrolithic statue which sat upon the throne when it was on Mt. Eryx. I do not know how many are disposed to accept this last conjecture; however, the authorities are agreed that the sculpture is Greek work, and they are not at variance concerning its period.

The relief represents Aphrodite rising from the sea, lifting her arms for the support of two figures which bend to receive her. She

*For other theories about the original use which may have been made of the marble faces, and the meaning of the reliefs, reference may be made to an article by C. L. Visconti in the *Bullettino della Commissione Archeologica Comunale di Roma*, 1887, p. 267, foll., and Helbig's *Guide to the Public Collections of Antiquities in Rome*.

†See Kierpert and Huelsen's maps of Rome, and Wissova's *Religion und Kultus der Römer*, pp. 236-237.

turns her head to the right—our left as we face the group,—and the two supporting figures reach down for her, each placing one hand beneath an arm of the goddess and with the other veiling her lower form with drapery. These two bending forms are explained as Horæ. We are shown that the goddess is rising from the sea by the straight line cut across the figure at the very base of the relief, this representing the surface line. We notice also the stony beach beneath the feet of the attendant Horæ. Then, too, the position of the feet indicates that they stand on a sloping shore, for each figure has one foot at the very edge of the water. The objection which Helbig raises against interpreting the representation as that of the goddess emerging from the sea does not seem to me to be well founded. He thinks that if the sculptor had intended to indicate water he would have given us a “series of waves, either with or without fish.” It is true



BIRTH OF APHRODITE, FROM ROME

that waves are sometimes represented, *e. g.*, on the fragment of Helios rising from the sea of the Parthenon Marbles, and also at the back of the so-called Ilissos. But in this relief I do not see how the sculptor could have shown waves within the space at his command, unless indeed he had chosen to place his Aphrodite somewhat lower and to allow the water to conceal those beautifully sculptured feet. Helbig's further suggestion that the middle figure may be a kneeling form, supported by attendants, does not seem possible, for all lines of the body indicate an upright position. If we observe closely the appearance of the garment which clothes the goddess we may see in it indications that she is rising from the water, for the garment, made of

fine material, clings very closely to her form, as it would do if wet. It is also probable that the sculptor represented the garment clinging so closely not only to suggest wetness, but also for the reason that he did not wish it to hide the lines of the body beneath. He wanted beauty of form to be visible, though draped. Or this closely fitting drapery may be one of the indications of the early period of the work, placing it back in the time before the sculptor had gained sufficient mastery of his art to represent clothing loosely and gracefully. Tarbell (*History of Greek Art*, p. 144), in discussing characteristics of the archaic period, writes, "when drapery is used there is a manifest desire on the sculptor's part to reveal what he can, more, in fact, than in reality could appear, of the form underneath."

The body of the goddess is perhaps a little flat and the breasts too prominent, but this again may be due to archaic influences. The body is given with front view, while the face is shown in profile. The eye, however, almost suggests a front view, at any rate the eye is not quite right. The nose, mouth, and chin are beautifully carved. The hair, bound by a fillet, parts to reveal the tip of a lovely ear, and falls gracefully down the back. The part on the side toward the beholder drops first on the left shoulder and then backward behind. One long lock falls forward over the right shoulder, being perhaps a trace of the usual archaic locks. The treatment of the arms is noticeable. They reach upward as if to grasp the Horæ, and then simply disappear beneath their drapery and forms. The drapery held before the lower form of the goddess hangs in almost perfect folds, too great regularity being avoided by having the attendant on our right lift the corner she holds a little higher than the other corner is held. The goddess herself has the right shoulder slightly elevated, as it should be when her head is bent back.

The attendant on our left seems to stand lower than the other. She is clothed in coarser material than the one on our right, as is shown by the wider and stiffer folds. The drapery of both Horæ is finely rendered. It is interesting to observe how the relief reveals in both the attendant figures the outline of the lower limb and the bare foot on the side away from us, which would be completely hidden if the drapery fell naturally. In this treatment again, as in the garment of the goddess, the sculptor did not wish to hide beauty of figure. The arms and hands of the Horæ are finely represented, and the dimple at the elbow of the one at our left is clearly seen. In posture they are nearly alike. Since the one on our right stands a little higher than the other she must bend slightly lower to reach the goddess. Of the heads we can say nothing, further than that they must have been at just the same height to make the composition symmetrical. Though there are now no traces of color on the figures it is probable that they were originally thus decorated. The relief furnishes a good example of Greek sculpture. There is nothing strained about it; it is simple, it is quiet. And in its simplicity and quietness lies much of its charm.

Now that we have seen this form of Aphrodite created in a period when Greek life was expanding with fresh confidence and new hope, and Greek sculptors were first finding themselves possessed of such technical mastery as enabled them to express adequately their ideals, and were happy in the newly gained power, from this hopeful, trustful, peaceful, upturned face of the goddess let us turn to another representation of her. And as we shall see her in new surroundings and changed in face and spirit in the painting of Sandro Botticelli so we may call her henceforth not Aphrodite, but by the name of her adoption, Venus.

One of the most interesting things about this picture is the fact that it ever was painted at all. Why should a Florentine of the XV century choose such a subject for a painting? Long centuries before his time the goddess had dropped almost, if not wholly, out of notice, so far as representations in art were concerned. Why then should she appear again at just this period? To answer this question at all satisfactorily would require far more time than I have at my disposal. Therefore all that I can do to help us the better to appreciate the conditions which give rise to this XV century Venus will be to sketch in a few sentences the course of art which caused her, in her developed years the most beautiful goddess of them all, thus to lose her popularity for a thousand years or more. Be it said, however, that she was not alone in the eclipse, her fate was shared by all the Classic gods and goddesses.

Within less than half a century after the date of the relief we have shown, Greek art in sculpture was entering upon its best period. And within a century and a half its bloom was past, and the decline had begun. The Hellenistic period succeeded with Pergamum and Rhodes as new centers of art. And then at the middle of the II century B. C. began the Roman period with Rome as the chief patroness of sculpture, or at least she wished to be the chief repository of it. But this period may be characterized as imitative rather than creative. The worthiest pieces of Roman sculpture, with the exception of portrait busts are, as everyone knows, copies of Greek originals. I need scarcely remind you how art had deteriorated even before the close of the Republic. But if it was bad then, how much worse was it in the II and III centuries of the Empire! Somebody at Rome was still able to do fair work in the reign of Trajan. The anaglyphs of Trajan in the Forum bear witness to this. But glance across at the reliefs of the time of Diocletian which lie only a short distance from the anaglyphs, and you have the measure of the decline in skill in less than 200 years. Another object at Rome whose sculptural decorations, of different periods, show the downward course of art is the Arch of Constantine.

About 15 years after the erection of this arch Constantine transferred the seat of government to Byzantium, and Byzantine art arose. Originally Greek in character it soon became affected with Oriental influences, and was turned toward decoration, neglecting portraiture

of the human form. And since it was of this character it was seized upon by the Church for the decoration of its places of worship and for the purpose of teaching its doctrines by means of mosaics and frescoes.

In her struggle against Paganism the Church naturally attacked Pagan art, which was an expression of Pagan ideals. And just for the reason that Pagan art had delighted in representations of the human form, and rejoiced in it as a thing of significance and beauty, the Church did the opposite. Thus during those 10 centuries, or more, following the rise of Byzantine influence, sculptors and painters directing their efforts to other ends, lost the power to carve or paint the human body in any lifelike way. Moreover traditional representations of different religious teachings grew fixed so that little opportunity was left for originality on the part of the artist. Thus art was fettered. It must choose religious subjects, and it must represent them in the way dictated by the Church.

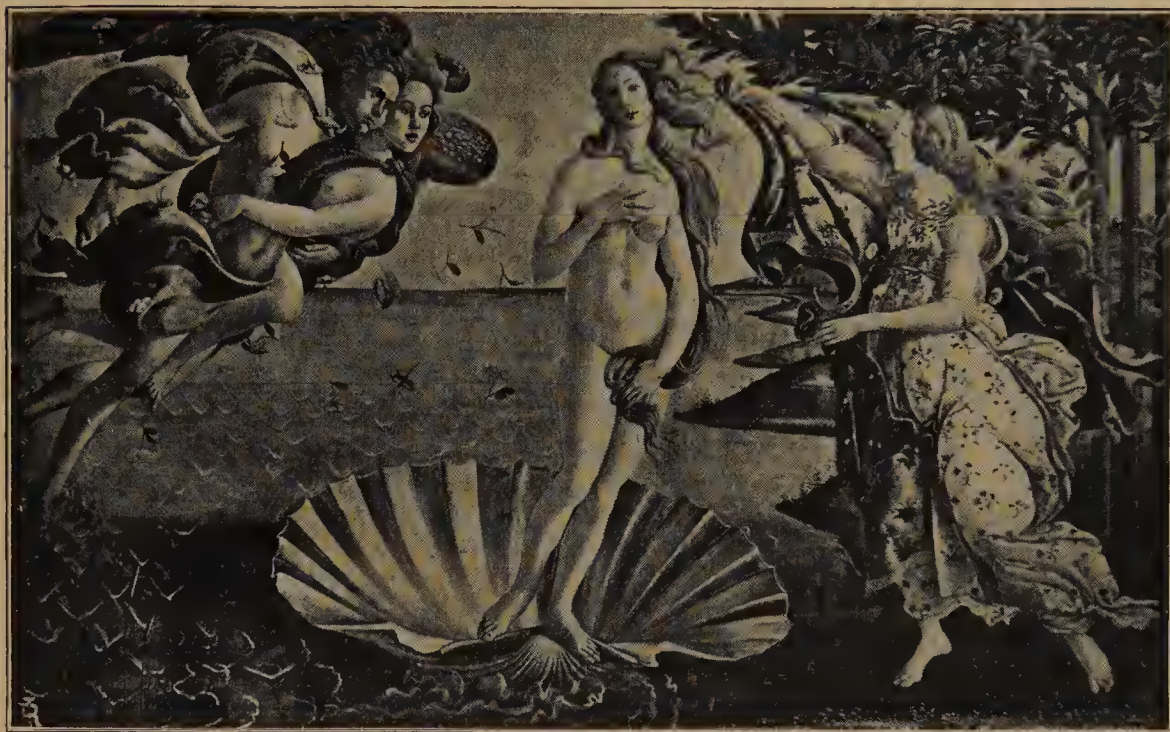
Time is wanting to speak of pictures which illustrate the development of this art. Those of you who have examined the walls of the Santa Maria Antiqua in the Roman Forum will recall those very early frescoes which illustrate what I have said.*

And at Florence you may see the Madonnas of Cimabue which show Christian Byzantine influence at its height.

With Cimabue we have reached the middle of the XIII century. His work was surpassed by Giotto, his pupil, who painted still almost wholly under the old influence, but succeeded in giving much greater reality to the forms he painted. And then at the beginning of the XV century appeared Masaccio, who surpassed both Cimabue and Giotto, and whose frescoes in the Church of the Carmine at Florence served as models even long after Byzantine influence had been outgrown. And last of all whom I can mention before the painter of the Birth of Venus was Fra Angelico, pious monk and devoted artist. Wholly under the influence of religious ideals, and working only for monastery or church, he painted his forms in almost a new spirit. The human face and figure under the guise of angels is for him again a thing of beauty. As a monk, he lived in the spirit of the past, as a painter, his interests were in the present. Bernhard Berenson in *Florence Painters of the Renaissance* says, "The sources of his feeling are in the Middle Ages, but he *enjoys* his feelings in a way which is almost modern."

Nine years before the death of Fra Angelico, Sandro Botticelli was born. More than a century before him Masaccio had almost succeeded in freeing painting from Byzantine lifelessness and conventionalism in representations of the human form. But neither he nor his follower, Fra Angelico, thought of departing from traditional subjects in art. But in Botticelli's time the spirit of Italian Renaissance

*For a description of these frescoes see the study by Rushforth in the *Papers of the British School in Rome*, 1902, and RECORDS OF THE PAST, May, 1906.



BIRTH OF VENUS. PAINTING BY BOTTICELLI

had developed much further. New satisfaction was being felt in Nature and in the life of men in the world. New sources of knowledge and of inspiration were being sought, life was expanding in all its interests. Moreover, Italy had regained her long lost acquaintance with Greek. Manuele Chrysoloras had come to Florence in 1498 and established himself as Professor of Greek, and his influence and that of his pupils had done much to spread the knowledge of Greek in Italy. The enthusiasm for the Old Learning, which was New Learning to them, was especially encouraged in Florence at the court of Lorenzo de' Medici, and around him as patron gathered scholars and poets and artists. Among painters we find Botticelli receiving this influence so strongly and expressing it so clearly that he becomes the typical painter of the period in which the spirit of the New Learning was fresh and strong. And the chief interest of his pictures, as it seems to me, lies in the fact that they so well reveal the spirit of a most interesting period of history. This is the reason why I have outlined, though so imperfectly, the decline of art in Italy in the centuries following the Classical age, and its rival with Giotto and his followers. Without an understanding of the rise of Byzantine art and the use the Church made of it we are not prepared to appreciate the revival of art in Italy in the XV century and the effort it took for painters to break away from Middle Age influences. And this, in a sentence, is the story of the Italian Renaissance in painting. It was the struggle to get free from the restrictions which the Church and Byzantine influence had laid upon this art, rendering it formal and untrue to nature.

Having these facts before us, the Birth of Venus by Botticelli becomes intelligible, and we are enabled to view it and enjoy it, not only as an important painting for technical and artistic reasons, but as most important for the place it occupies in the development of Italian art. Botticelli also painted Madonnas, of course; there was a demand for them. But by this picture and others, as for example, "Spring" in the Academy at Florence, "Calumny" in the Uffizi, "Pallas and a Centaur" in the Petti Palace, he declared that art was free. And the fact that Botticelli in his freedom went to Greek mythology for subjects, and inspiration is proof of the enthusiasm which he and many others of his time felt for Greek ideals. But he was not a Greek, and the best that he could do in the treatment of such a subject as the Birth of Venus was to paint it as it appealed to him, an Italian.

The goddess admirably poised on the point of a sea-shell is just reaching the shore. Two Zephyrs pressing closely after blow the graceful bark to land. The water ripples beneath. In a moment more Venus may step forth. A figure on shore hastens, almost flies, to meet her, holding a robe in her outstretched hands with which to receive the goddess. In the back-ground are straight, serious looking trees, and as the view recedes the land reaches down to the water in a series of projections till the eye meets the horizon in the distance. Roses are dropping into the sea after the goddess, and the robe of the figure on land, as well as the one she holds out for the beautiful but sad-faced Venus, is sprinkled over with flowers in design. The colors of the picture are sober, almost cold. Morning has come, but the full brightness of day has not appeared.

The source from which both the Greek sculptor and Botticelli drew their inspiration must have been the sixth Homeric Hymn. It begins in the translation by John Edgar, (Edinburg, 1891), "Of beautiful Aphrodite, the revered, the golden crowned, shall I sing, who is mistress of the heights of all sea-washed Cyprus, where on the light foam the might of the moist-blowing Zephyr bore her over the wave of the boisterous sea. Gladly did the golden-snooded hours welcome her, and clothe her round with raiment divine."

While viewing this picture of Botticelli's we should not fail to bear in mind that of all others of his period he was an allegorical painter. And it is altogether probable that in this picture he wished to show something more than form and the movement in which he so delighted. Venus may represent the New Spirit of the Renaissance; the figure on shore, the Italy of that time stretching out her arms to welcome the coming of the new life. Notice how somewhat reluctant the goddess stands, with face turned neither backward nor forward, and eyes almost down-cast. In pose and expression she is sad and thoughtful, and acts as if to cover herself with hands and tresses, feeling that the world to which she comes is not her world after all. No Greek sculptor would have given a face such an expression indicative of a heart full of memories of the past and of its regrets.. This interpretation accounts also for the sober coloring of the

picture. Brightness would not have harmonized with the spirit of the goddess. But the Age to which she comes to revive it with the freshness of her presence is all haste and eagerness in the welcome she extends. This was Botticelli's own spirit and that of the Renaissance.

For my closing words I have none more fitting than those of Walter Pater, found in his *Studies in the History of the Renaissance*, "Of the Greeks as they really were, of their difference from ourselves, of the aspects of their outward life, we know far more than Botticelli, or his most learned contemporaries; but for us, long familiarity has taken off the edge of the lesson, and we are hardly conscious of what we owe to the Hellenic spirit. But in pictures like this of Botticelli's you have a record of the first impression made by it on minds turned back towards it in almost painful aspiration from a world in which it had been ignored so long; and in the passion, the energy, the industry of realization, with which Botticelli carries out his intention, is the exact measure of the legitimate influence over the human mind of the imaginative system of which this is the central myth."

SAMUEL ALLEN JEFFERS.

State Normal School, California, Penn.



DOCUMENTS FROM THE TEMPLE ARCHIVES OF NIPPUR

PROFESSOR CLAY, of the University of Pennsylvania, has again come before the Assyriological world with two volumes of inscriptions* which will no doubt be highly appreciated, since they treat of a subject which has been practically untouched before.

After 3 years of study of the tablets in the Babylonian Museum of the University of Pennsylvania, Prof. Clay has prepared these two volumes of Documents, which are dated in the reigns of Cassite Rulers of the XIV century B. C. To general readers, and non-assyriologists, the chief interest of these books naturally lies in the introductions to the volumes. In these Dr. Clay has given the results of his study of the texts published. I may here repeat parenthetically a statement

**Documents from the Temple Archives of Nippur, Dated in the Reigns of the Cassite Rulers.* By Rev. Albert T. Clay, Ph. D., Assistant Professor of Semitic Philology and Archæology, and Assistant Curator of the Babylonian and General Semitic Section of the Department of Archæology, University of Pennsylvania; Volumes XIV and XV of The Babylonian Expedition of the University of Pennsylvania; Series A; Cuneiform Texts, edited by H. V. Hilprecht, and published for the Department of Archæology, University of Pennsylvania, by the Eckley Brinton Coxe, Jr., Fund, 1906.

made by Dr. Ranke, in a review of one of Prof. Clay's former volumes in the *RECORDS OF THE PAST*, (Dec. 1904), that "the author, probably the foremost living copyist of cuneiform tablets, had almost surpassed himself in the new edition of Neo-Babylonian text." Of the copies in these volumes we may say that they surpass any texts heretofore published either by Prof. Clay or any other Assyriologist. It is heartrending to see some of the slovenly plates of texts put out by scholars, because one is sure that there cannot be much accuracy where no attention is paid to details. Prof. Clay has given not only an accurate reproduction of the tablets, but also makes his plates look neat, attractive and artistic.

Most of the tablets here published were discovered during the second expedition to Nippur, sent out by the Babylonian Section of the University of Pennsylvania, 1889, under the directorship of Prof. J. P. Peters, D. D. Additional discoveries were made by Dr. J. H. Haynes, director of the third expedition, 1893-95. Prof. Clay quotes Dr. Haynes: "In the spring of 1893 and in the winter and spring of 1895, 25,000 tablets (and fragments) were recovered from the ruins of this mound. Several rooms of an ancient palace were explored and found to preserve the archives in the very position and arrangement in which they had been left when the building was destroyed. In several instances the tablets were placed on their edges, reclining against each other like a shelf of leaning books in an ill kept library of to-day. In other instances the tablets were found in great confusion, showing that at the time when they were buried they had fallen [perhaps from wooden shelves] into the debris which covered them."

Some few tablets of these archives found their way to New York, and form part of the E. A. Hoffman Collection. This happened, as the author remarks, through illicit diggings on the part of thievish Arabs. These have been briefly described by Dr. Radau in his *Early Babylonian History*. Dr. Clay observes that the Doctor has drawn too freely upon his imagination. He was given permission to publish these tablets, and has included them in his volumes. Here the *Teliti* disappears from the map (the word *teliti* means something like "crop" as many passages in the texts show); and the new king introduced by Dr. Radau as Shibir must be withdrawn from the history of this particular time (the signs which were read as Shibir are the harmless Assyrian word *Kisrum* "property.") Another ruler labeled with the Italian Girriabba, must also be withdrawn, and a small town Girri Tamti "Road to the sea" becomes known to us.

Among other valuable historical points brought out by these texts the author has shown that the ruler whose name is incomplete in the list of Cassite kings must be restored Kadashman-Bel and not Kadash [man-Buriash].

For the contents of these tablets I will let the author speak:

With the exception of about fifteen documents these inscriptions are records of the receipt of taxes or rents from outlying districts about Nippur; of com-

RECORD OF TAX COLLECTIONS IN LIVE STOCK FROM DIFFERENT CITIES

The image shows a dark, rectangular object with a highly textured, almost woven appearance. It features a grid of raised rectangular blocks, suggesting a woven fabric or a carved stone surface. The left edge is severely damaged, with a jagged, torn, and irregular border. The overall color is a dark, mottled grey or black, with some lighter, yellowish-brown areas visible, particularly along the damaged edge and in the recesses of the grid. The object is set against a plain, light-colored background.

mercial transactions conducted with this property; and the payment of salaries of the storehouse officials as well as of the priests, and others in the temple service. In other words they refer to the handling and disposition of the taxes after they had been collected.

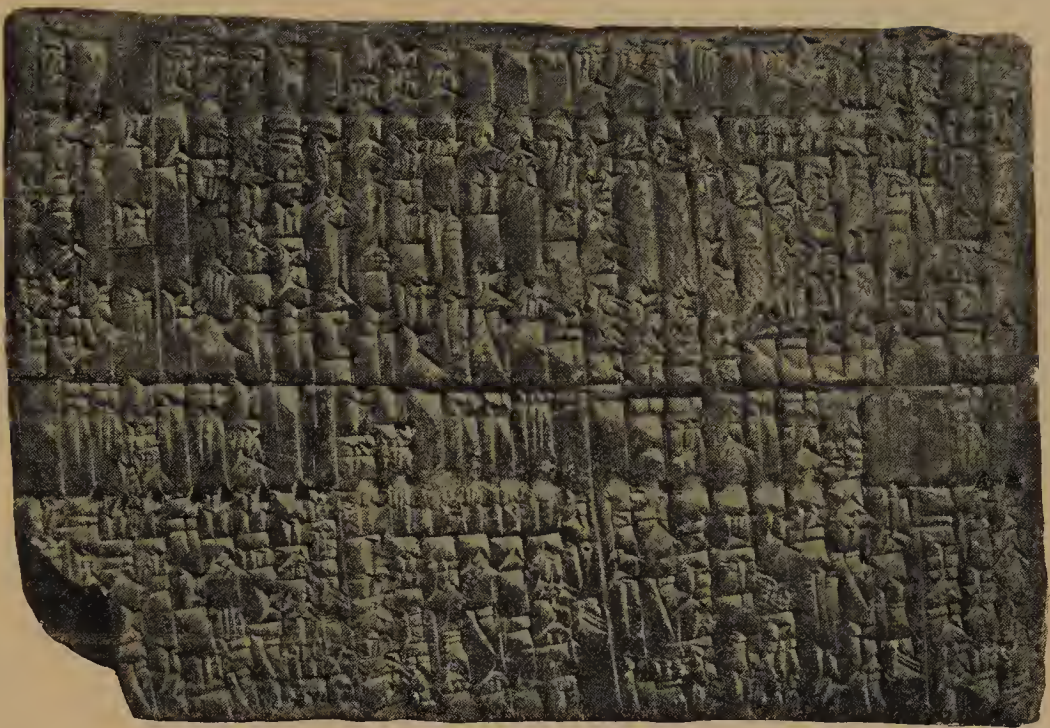
This income is commonly designated as *GISH-BAR*, which is generally translated "tax" or "rent." Further, the kind of tax is stipulated: *GISH-BAR-GAL*, *GISH-BAR KU-QAR*, *GISH-BAR SHE-BA*, *GISH-BAR tab-ki GISH-BAR* 4 *qa* (5 *qa*, 6 *qa*, 10 *qa*, and once 12 *qa*,) and *GISH-BAR KIN-SIG GISH-BAR*, 4 *qa*, etc., has no reference to the kind of tax levied, as it refers frequently to cereals; in one tablet it applies to wine, and in another to animals. The same is true of the other terms. The tax was paid in all kinds of natural products, such as corn, sesame, oil, dates, flour, live stock, etc.—doubtless according to a relative standard of values.

Exactly what the specification 4 *qa*, etc., refers to, cannot be determined. The temple, as in other ages, doubtless owned lands and other property; and held endowment. The *GISH-BAR* scarcely meant rent for such possessions, because of the smallness of the amount, namely, 4 to 10 *qa*, which we would naturally think was according to the *gur* (= 180 *qa* in this period). It was more likely either the amount of tax levied by the temple upon the *gur* of seed sowed, or harvested; or per *gur* of land; or in other words, an income tax, *i. e.*, it was according to the individual's income. Cf. the expression: *te-li-tum GISH-BAR-GAL* "crop tax," (XIV, 100: 1). *GISH-BAR-GAL*, doubtless, was the larger amount, namely 10 *qa*. It may be the tithe or tax of the arable lands. *GISH-BAR* 4 *qa*, may be for the fallow lands, or the minimum which those who were less prosperous were expected to give. *GISH-BAR SHE-BA* (*ipru*) is doubtless a general term, meaning something like "maintenance tax." What is paid out, especially to the average servant or tradesman, is called *ipru* (*SHE-BA*) or "wages."

The purpose of this tithe or tax is set forth in a number of tablets, which the following quotations will illustrate. The heading of XIV No. 57 reads: "Grain of the 6 *qa* tax, which, out of the crop of the 12th year of *Nazi-Maruttash*, from the town *Zarat-IM*, was given for the priests." The heading of XV, 84, reads: "Grain of the 6 *qa* tax, which from *Bît-Ninib-apal-iddina*, was given for the wages of the temple servant." The heading of No. 153, Vol. XV, reads: "Barley of the full tax, which for the salary of the *riqqu* and the *KA-ZID-DA* officers, *Burahu* brought to Nippur." The opening lines of No. 37, Vol. XV, read: "Grain of the full tax of the house of god, for the farmer and keeper of stores, which the town *Zarat-IM* gave in the month Marchesvan, year 13th." This tax, in other words, was levied for the maintenance of the priest, temple servant, storehouse official, farmer, etc., as well as for general expenses.

Further, it is quite clear that these are temple revenues. Payments are made out of the *mashsharti sha êkalli*, "temple stipend"; out of the *GISH-BAR-GAL bît-ili*, "full tax of the house of god"; to the *ardu* and *amtu êkalli* "male and female temple servants." Besides the priests (*ishshaku*), who figured prominently in the salary payments, the temple gateman (*a-bil bâbi bît-a-nu*), the singer (*sammeru*), the temple shepherd (*nâqidu sha bîti*), etc., are salaried officers. The temple in these archives is usually called *bîtinu* "our house," or simply *bîtu* "house," cf. *ipru marê bit-ti*, "wages for the sons of the house." The property handled also is spoken of as the possession of the god, cf. "60 *gur* of grain of the full tax, the property of the god." Cf. also the interesting text XIV, No. 148, in which payments are made for sacrificial purposes as well as for the maintenance of a large number of temples and shrines. These are headed by *Ekur*. They were doubtless within the temple court, or at least in Nippur.

There is little in these documents to show that the revenues were collected in the interests of the state, or that the king was a beneficiary, unless perhaps



PAYMENTS OF TEMPLE STIPENDS

tablet No. 26:3 of Vol. XV, which reads: *sha a-na SHE-BAR Nippur^{ki} ù Dûr-Ku-ri-Gal-zu*, "which is for the maintenance of *Nippur* and *Dûr-Ku-ri-Gal-zu*," the latter place being probably a royal fortress. In the tablet referred to (No. 148), amounts are also paid, *sha si-ri-bi-shu sha sharri, a-na nu-ri sha sharri, a-na nu-ri bîti-nu, a-na sharri, a-na bîtinu*.

The understanding doubtless is, that the temple was not only the foremost institution of the city, but that it practically supported and controlled everything in its immediate vicinity.

This income was received from quite a number of towns, which belonged presumably to the environs of Nippur. In the transactions dealing with these revenues not only the kind of *GISH-BAR* is mentioned, whether it was *SHE-BA*, or so many *qa*, etc., but also the town from which the taxes were received. These facts were doubtless recorded in order that the records might show what disposition had been made of the incoming revenues received from the various storehouses and estates, in and about the city.

After the taxes had been collected they were either brought to Nippur; or if the town had a storehouse, they were deposited in it. A good many of the documents refer to the fact that the commodities were taken from a storehouse (*karû*) of a certain town. The taxes from small hamlets or estates were doubtless brought to Nippur and deposited in one of its storehouses, or used for immediate payments, or for business transactions. Several storehouses were located in Nippur, as is naturally to be expected, inasmuch as the taxes were paid in kind, which included animals as well as grain and general produce. Mention is made of the *bît karû sha Nippur^{ki}* "Storehouse of Nippur," the *miksi shaplu* "Lowery granery" *abullu* "Gate" where stores were kept, etc.



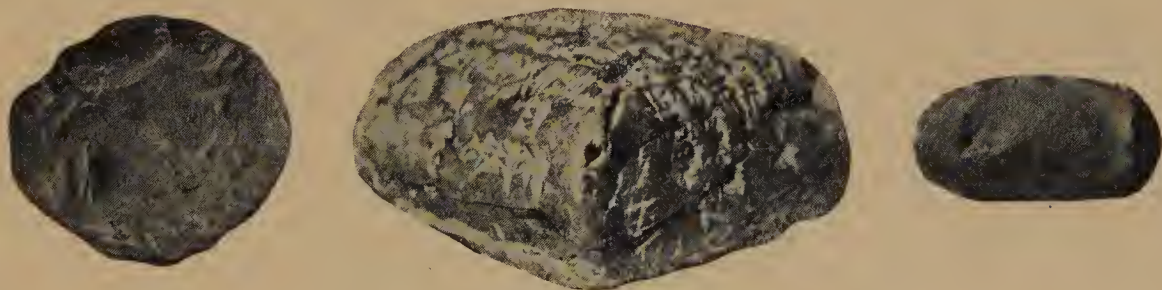
A SEAL IMPRESSION

In discussing case tablets Dr. Clay takes exception to some more or less fanciful explanations, and shows that tablets were encased primarily for prudential purposes.

In the first place, as referred to, all the case tablets bear seals, or their substitutes. The seal impression is equivalent to the signature of the modern document. It belongs to the man upon whom the obligation rests, or who is the recipient mentioned in the tablet, or to whom the goods are delivered. The other holds the document, who in this case is the official of the temple storehouse. Unless the obligator or the witnesses receive duplicate copies, what guarantee has he that the document will not be interfered with? Further, alteration was possible by either party, even if duplicate copies were made. If it was of sufficient importance to require the individual's seal, we would naturally think that he had a right to protect himself, and to take precautions that the document would not be altered, especially as we know that this was not impossible. The only way this protection could be assured was to encase



SEAL IMPRESSIONS OF THE CASSITE PERIOD



MARKS OF THE SISIQTU

the tablet, and for the obligor to make impressions with his seal upon the envelope. The holder of the document might be able to make changes on the case, but he could not peel it off to alter the tablet; because he could not restore the envelope which contained the seal of the obligor. If in some way the case had been injured, or alteration was suspected, it would be an easy matter to remove the envelope in the presence of the contracting parties, and thus verify the contract which had been entered into. In short, it is impossible to conceive a better protected document than a case-tablet properly sealed; whereas, an ordinary tablet, although it contained seal impressions, could be altered.

Under "Seals and their substitutes," some very interesting points are brought out. On some tablets instead of *kunukku* seal, there is written *sisiqtu*. This has been interpreted as being a mark of cloth, but where the word occurs on Dr. Clay's tablets, he has observed a small hole in the tablet. Though nothing definite can be

suggested, still it seems that the indentations were made by some kind of an instrument which in some way was attached to the garment.

Frequently instead of a seal there was a thumb-nail mark. The author in his *Business Documents of Murashu Sons* has fully discussed the use of the seal. (See RECORDS OF THE PAST, Dec. 1904, Vol. III, p. 367.) The seals themselves of this period are very interesting and beautiful.

In discussing the stylus Prof. Clay has taken up a subject that has long interested Assyrians and the general reading public. Just how did the Old Babylonians write upon clay? Many explanations have been advanced, but many of them will not bear an attempt to put their claims into practice. Prof. Clay after experimenting and always bearing in mind the fact that the solution must be a simple one, has come to a definite conclusion. He says:

The stylus used by the ancient scribe was a very simple affair. Any stick of metal, or hard wood, (presumably reed wood (*qanû*), hence *qan duppi* "tablet reed") which has a square corner, that is with an angle of 90° , more or less could be used.

By holding it beneath the palm of the hand, between the thumb and the middle finger, with the index finger on top, and pressing the angular corner into the soft clay, the impression made will be that of a perfect wedge, the same as is found on the ancient tablets. What is known as the *winkelhaken* is not simply an oblique wedge as above, although occasionally the impressions resemble it, but it is made in a different way. The stylus is simply laid over on its side, with the handle toward the right, and when pressed into the soft clay, makes the desired impression. If the scribe failed to turn his stylus far enough the impression resembled the oblique wedge. Every variation due to this fact, is found, from the oblique wedge to the perfect *winkelhaken*. That this is the proper explanation as to how the latter was made, is proved by what follows.

A very marked peculiarity of the stylus in most periods, especially from the time of the I dynasty of Babylon, is that the top very frequently sloped to one side. When the top of the perpendicular wedge does not slope, the *winkelhaken* has a perfect right angle. A great many scribes, however, from other quarters, in all periods, slope the top of their stylus so that the upper right corner of the impression in the clay was lower than the left. The stylus was cut in this manner, it seems to me, so that the angle of the *winkelhaken* would be less than a right angle, for when the top was perfectly square the end of the "hook" spread, doubtless, more than was desired. The angle of the *winkelhaken* varies according to this slope. The greater the bevel of the top of the stylus the smaller the angle. This fact enables us to prove conclusively that the above explanation as to how the *winkelhaken* was made, is correct.

The transliteration and translation of the following selected texts illustrate in a general way, the contents of the tablets.

Translation: Grain of the full tax, which for the salary of the *riqqu* and *KA-ZID-DA* officers, Burahu brought to Nippur:

1 *gur* 96 *qa*. . . .from Bashsha (was received).

2 *gur* 36 *qa* second (payment from) ditto 2.

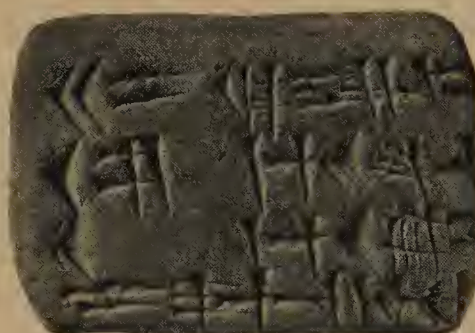
1 *gur* 78 *qa* third (payment from) ditto 3.



FORMS OF STYLUS



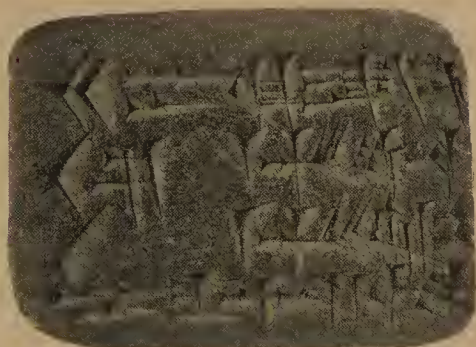
WRITTEN WITH ZEHNPFUND'S
STYLUS



WRITTEN WITH DE MORGAN'S
STYLUS



ORIGINAL *



WRITTEN WITH SQUARE END
STYLUS



WRITTEN WITH BEVELED END
STYLUS

102 *qa* fourth (payment from) ditto 4.
 1 *gur* 174 *qa* fifth (payment from) ditto 5.
 Total, 7 *gur* 174 *qa* from the month Shebat unto Adar.

II. The following are records of loans made from the stores collected, with the stipulation that the same shall be paid at a certain time.

Translation: 1 *gur* of grain of the full tax, IB-KID, on interest, from the storehouse, to be paid by Burra-Ishtar, son of Ushbi-Sah. On the day of his harvest the grain, and its interest he shall pay (literally measure). Before Sin-issahra (witness). Before Ramman-erish (witness), the measurer. (Date.) Thumb-mark of Burra-Ishtar.

III. The following illustrate the general character of those regarded as simple receipts, a great many of which doubtless are records of salaries which were paid, while others are equivalent to records of debts.

Translation: Maintenance seed of the full tax, Bubbu, the *riqqu* officer, has received from Innannu. (Date.)

Translation: 5 minas of pure sheep wool and one lamb, for an upper garment, Resh-Marduk, son of Bariia, the weaver, has received from the hand of Martuku. (Date.)

Translation: 10 sheep belonging to Irimanni-Ramman which Innibi received from Usati, the shepherd. (Date.)

IV. The following inscriptions are records of payments to officials of the storehouse and others in the temple service, as well for the purchase and hire of certain things. A good many mention the town from which the revenues were brought, and frequently the official's name who made the collection. The officer who made the payment is not mentioned except in a few cases.

Translation: 2 *gur* 60 *qa* grain of the sustenance tax, 2 sheep, 2 lambs, salary (literally, "food") for Innannu. (Date.)

Translation: 31 *gur* 30 *qa* grain, food for horses, out of the maintenance tax, 19 sheep, 21 lambs, (as) salary, from the month Tebet unto the 4th day of Nisan, (for) Innannu.

Translation: Grain of the full tax, out of the barley which Innannu from the town Kalbiia for salary has received. 2 *gur* (to) Ahu-DU-kan the *riqqu* officer, 2 *gur* (to) Kiditum, the *riqqu* officer, 2 *gur* (to) Reshtushu, the KĀ-ZID-DA. Total, 6 (*gurs*). (Date.)

The following records, while containing no verb, evidently are mere statements of payments for service.

Translation: 4 *gur* 114 *qa* of flour, Mar-Resh-Kadi. (Date.)

Translation: 5 *gur* 12 *qa* tax Mar-Ludar-beli in horse food, from the 30th day of the month Kislev (has received).



PAYMENTS OF SALARIES TO PRIESTS, SHOWING CHECK MARKS

In the following an official receives grain for the purpose of paying maintenance expenses and salaries.

Translation: Twenty *gur* of seed of the stored tax (grain) from the town Zarat-Dur-Gula, Rabba-sha-Nergal has received from the hand of Martuku. The maintenance expenses and salaries he shall pay, and he shall transact the business. (Date.)

Besides these administrative documents some were found which seem to be of a private character. The following is a decision rendered, in which an individual is required to make good the loss of a crop, inasmuch as he failed to replace at a certain time an ox which he had borrowed, and whose leg he had broken.

Translation: One pasture ox Iqisha-Bel, son of Hashma-Harba, received from Belanu, son of Ibbi-amel-uballit for farming; and he broke his leg; whereupon Belanu thus spoke to Iqisha-Bel: An ox bring that I may plant in the field, (so that) a planting thou shalt not cause me to miss. Iqisha-Bel thus spoke to Belanu: An ox in the month Ab I will give thee. Iqisha-Bel in Ab did not give the ox to Belanu: wherefore, Iqisha-Bel shall make good to Belanu the crop of the field.

The names of two witnesses and the date follow. Three thumb-nail marks were made on the left edge of the tablet.

The following is an agreement to assume a debt for which a priest was imprisoned.

Translation: Mina-egu-ana-Shamash, son of Salli-lumur, the priest, Amel-Marduk, his lord, put him in prison, and Arkat-Nergal, son of Ardu-nubatti made an agreement, and brought him forth. Thirteen and one-third sheqels of gold he shall take and pay to Marduk-risoa (the jailer, or his agent); whereupon Mina-egu-ana-Shamash, and. . . . his wife, he shall take, and to Amel-Marduk shall pay. (i. e., through the agent of Marduk-risoa).

The date is followed by: "The thumb-nail mark of Arkat-Nergal like his seal." On the left edge of the tablet 6 thumb-nail marks are seen.

D. D. LUCKENBILL.



EDITORIAL NOTES

SEASON OF THE YEAR WHEN POMPEII WAS BURIED:—Though all have agreed as to the year in which Vesuvius destroyed Pompeii, there has been a difference of opinion as to the time of the year. The discovery as reported by Rodolfo Lanciani, of the trunk with branches, leaves and berries of the *laurus nobilis* has made it certain that the great eruption occurred in the autumn. The impression of the trunk and all its parts in the soft ashes was extremely delicate. The berries have been identified beyond question, and it is known that they do not mature until autumn. Numerous chips surrounded it, making it appear that the wood-cutters were interrupted in their work. Near by were found the remains of 3 bodies—possibly those of the very wood-cutters mentioned.

ANCIENT LANDMARK NEAR THE COLISEUM:—Near the Coliseum an altar marking the crossing of two thoroughfares, one called Vicus Statae Matris, has just been discovered. It is "beautifully ornamented with wreaths and branches of laurel, and contains the names of the 4 street-magistrates who had borne the expense of its erection in the year 2 B. C., under the councilship of Caninius Gallus and Fufius Geminus." This gives two entirely new bits of information. It was not previously known that a street was named after Stata Mater (who was invoked to stay the progress of fires), nor that the two men mentioned were consuls in that year. The name of Fufius Geminus is not found in the Fasti Consulares.



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AUGUST 1906,

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AUGUST 1906

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DUBUQUE'S GRAVE IN 1835
[Reproduced from drawing by Geo Catlin.]



JULIEN DUBUQUE MONUMENT

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VOL. V



PART VIII

AUGUST, 1906

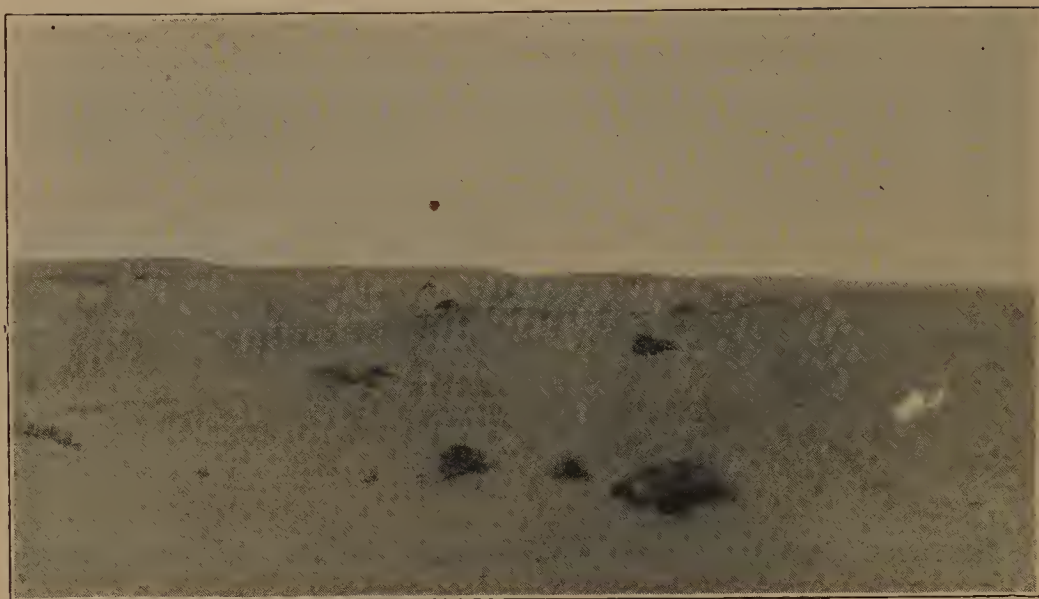


THE BISMYA TEMPLE

OF the several groups of Babylonian ruin-mounds, which bear the name Bismya, one is situated in the very center of the Gezireh, or that part of Mesopotamia which lies south of Bagdad, and is included between the two rivers, the Tigris, and the Euphrates. A second mound bearing the same name stands on the Tigris, not far from the modern town of Koot. It is said that a third is north of Bagdad.

It is in the first of these ruins, that, in the autumn of 1903, after 3 years of effort and waiting in Constantinople, I received from the Ottoman government permission to excavate. The work was begun on Christmas day, 1903, and continued uninterruptedly with a force of 120 men until the following June; it was resumed for a short time after the close of the hot summer months.

To the few travelers who have visited Bismya, its ruins have been unattractive. The group of mounds, consisting of a number of low ridges, and nowhere exceeding 40 ft. in height, appears insignificant when compared with the loftier ruins of Birs, Nippur and Warka, yet in extent Bismya is one of the largest of the sites of the ancient Babylonian cities. The group is about a mile in length, and half a mile in width. On account of its position far from the nearest water, in a sand swept tract of the desert and upon the border land of several of the most inhospitable tribes of Arabs, excavations there have been regarded as impracticable or impossible, and the German



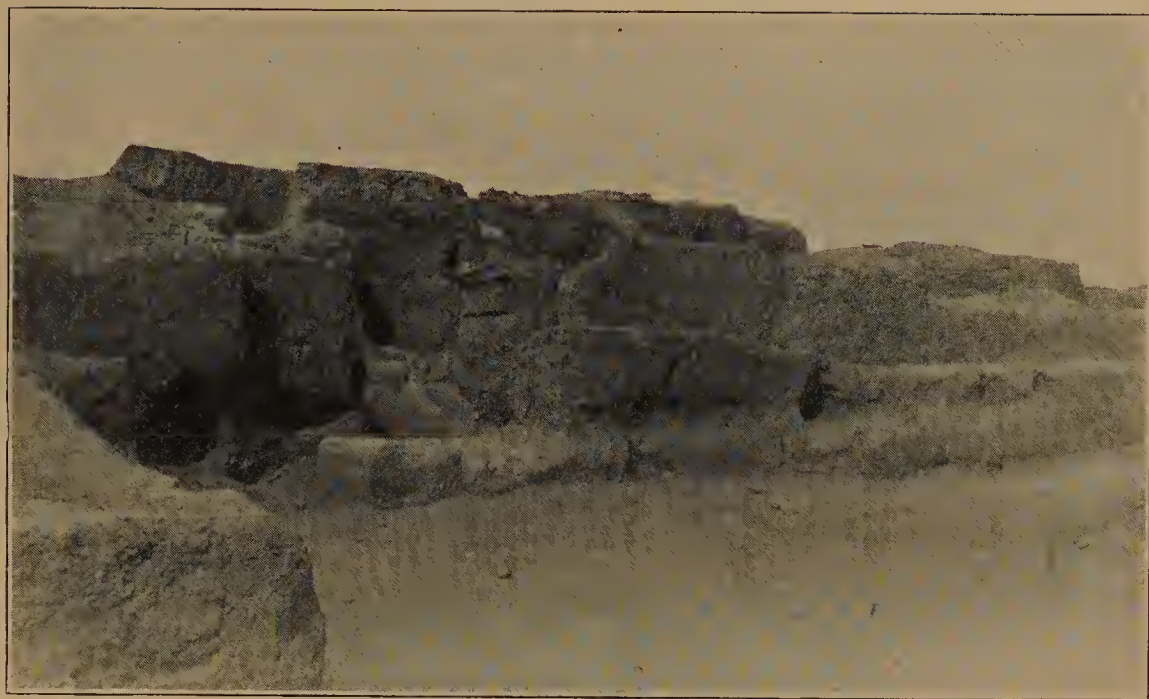
MOUNDS AT BISMYA BEFORE EXCAVATION

explorers who failed to notice the inscribed bricks and fragments of polished alabaster vases upon the surface, are said to have regarded it as dating only from the civilization of the Arabs.

Like several others of the Babylonian ruins, as Nippur, Warka, and Tel Ibrahim, the mounds of Bismya are divided into two unequal parts by the bed of an ancient canal in which the stream passed through the city from the southwest to the northeast. Near the northeastern edge of the city, upon an island in the canal, is one of the highest of the mounds of the Bismya group. Its square shape suggested the ruin of a stage tower which formed a prominent part of every Babylonian temple, and it was therefore at this point that I decided to open the excavations. The present article describes a few of the results of the excavations of this mound.

Gangs of workmen placed upon the 4 sides of the hills dug trenches through the fallen debris and the drifting sand toward the center. The trenches had not proceeded far when upon all 4 sides the lower story of a stage tower appeared. The trenches then turned at right angles, and following along the edges of the tower, entirely encircled it. The summit, in which a number of modern Arab graves were found, was next cleared. The second story of this ancient tower or ziggurat, with the exception of a few bricks at the south corner, had entirely disappeared, yet heaps of the burned bricks of its outer casing were scattered about the sides where they had fallen.

At the present time I am unable to give the exact dimensions of the lower stage of the tower. However, it was constructed of an outer casing of square, burned bricks, about 4 ft. in thickness, while the interior was filled in with unbaked bricks and unmoulded clay. Upon the under surface of a number of the burned bricks of the outer casing, perhaps upon 1 in 20, was an engraved inscription of Dungi,



NORTHWEST SIDE OF THE TEMPLE TOWER



WEST CORNER OF THE TEMPLE

king of Ur, 2750 B. C. The inscription, like others from that king, did not contain the name of the city or temple in which the bricks were employed. In this there was disappointment, for one of the points which I was most anxious to discover was the name of the ancient city in which we were digging. The inscription merely said

that Dungi had dedicated the temple platform to his goddess Nin-harsag. However, we learned that at Bismya, the well known goddess, whose name may be translated "The Lady of the Mountain Peak," was worshipped.

Just beneath the bricks of Dungi, a second layer of burned bricks was found bearing the name of Ur-gur, king of Ur, but they gave us no information other than that the father of Dungi had also repaired the Bismya temple.

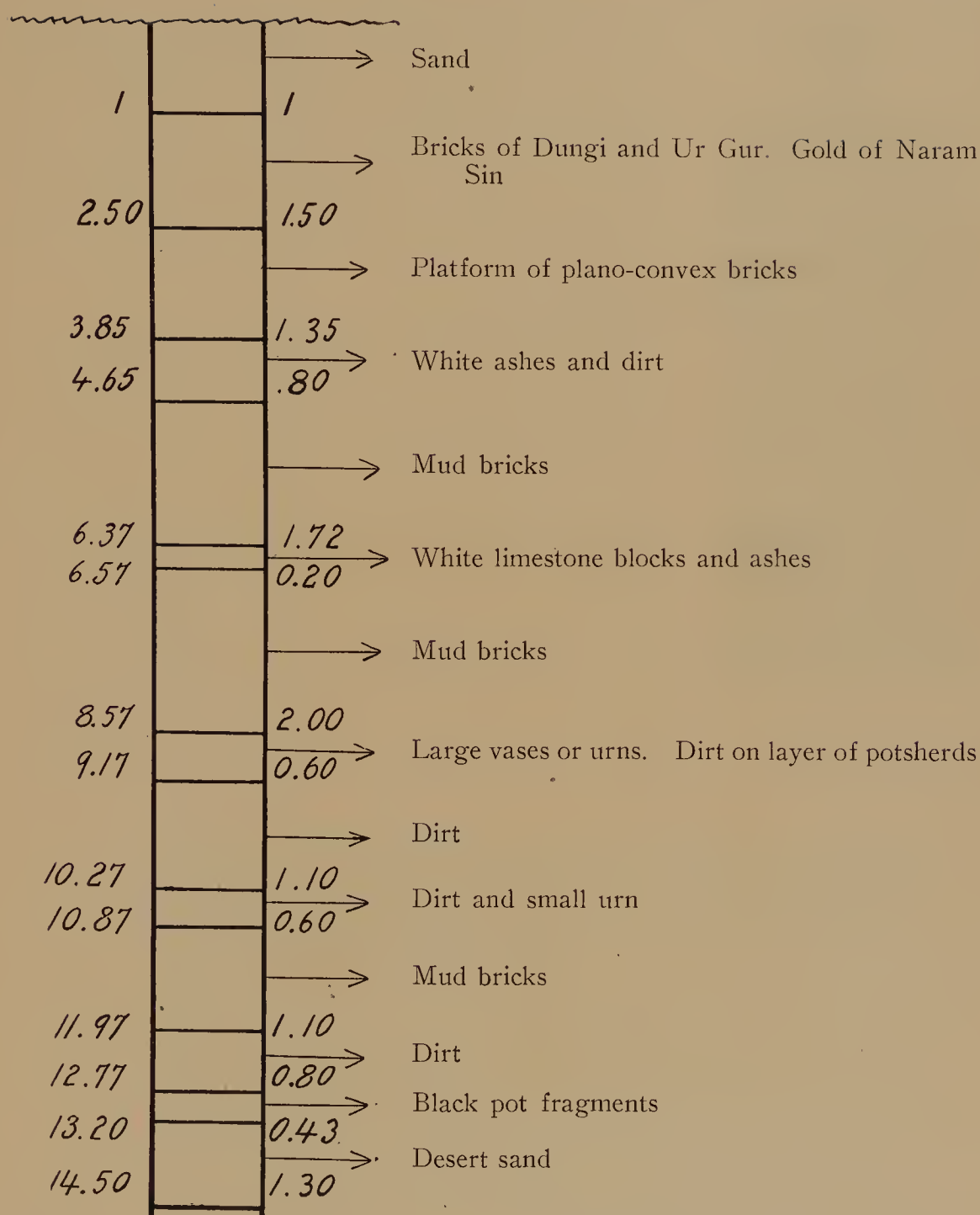
Along the northwest edge of the surface of the platform, a workman who had dug beneath the level of Ur-gur's brick, threw up a small, crumbled piece of yellow metal. It was with considerable effort that I straightened and smoothed it out; it proved to be a piece of thick gold leaf torn from the center of a large plate of gold. Upon



FRONT AND REAR VIEWS OF THE
MARBLE STATUETTE

it were the first 4 lines of an inscription, yet like the previously discovered brick inscription, it gave no clew to the name of the city. However, the first line contained the name of Naram Sin, the famous son of the more famous Sargon whose date is placed at 3800 B. C. It was then that we began to realize the great antiquity of the ruins in which we were excavating. The bricks of Dungi upon the very surface pointed to 2800 B. C. The gold of Naram Sin, hardly 2 ft. below them, pointed to a thousand years earlier, and still there were nearly 40 ft. of ruins beneath us and above the desert level.

In the vicinity of the gold of Naram Sin was found a small, white marble, headless statuette. While it contained no inscription, its



SHAFT AT THE SOUTHWEST EDGE OF THE TEMPLE PLATFORM, SUNK TO THE SAND OF THE DESERT LEVEL. TOTAL DEPTH 14.50 METERS

costume and its art ascribe to it the age of Naram Sin. The garment was thrown over the left shoulder, while the right arm and shoulder are bare. A little lower, and beneath the spot where the gold appeared, we discovered large, square bricks, measuring about 18 in. on each side. They bore no inscription, yet they resembled in every respect the bricks of Sargon found elsewhere. In other mounds at Bismya a number of inscriptions from this once supposed mythical



STATUE OF DA-UDU
OR DAVID

king were discovered. Still lower we came upon a series of thin, rectangular bricks, marked with lines formed by drawing the fingers along the clay before it was baked, and lower still, about 5 ft. from the surface, was a floor of bitumen in which small plano-convex bricks were set. The bricks of this shape had previously been assigned by assyriologists to 4500 B. C.

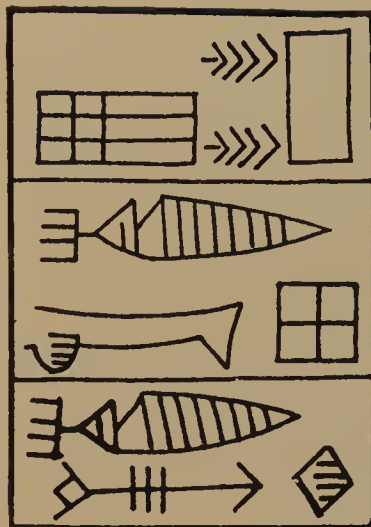
In the meantime trenches were being sunk along the edges of the platform of Dungi; and at the northwest side of the trench we reached the floor of an ancient passageway at a depth of about 10 ft. At the west corner, just beneath the foundation, as the dirt was dug away, there appeared the side of a large block of white marble. Abbas, the workman who discovered it, excitedly called to me, and hurrying into the trench, I recognized it at once as a part of a large white marble statue. The excited gang was transferred to another place for the remainder of the day, and at the close of the work, I dug out with my own hands the oldest statue in the world. Its position, lying upon its back,

showed that it had been hurled from the platform of plano-convex bricks above, and the succeeding platforms of the temples had been built above it. In the fall its toes had been broken away, but the fragments were lying at the feet, and when fitted together, the lower part of the statue was perfect. As the dirt was dug away from the shoulder and we came to the neck, the head was missing. Grieving that our statue was headless, we bore it to camp, and placing it in a bath tub, scrubbed away the dirt which clung to it. Upon the right upper arm appeared an inscription of three lines engraved in a character so archaic that it was only after considerable time and difficulty that I was able to translate it, yet when translated it was found to contain the information which was most desired. The first line gave the name of the temple in which we were excavating as Emach; the second said that the king whom the statue represents was Da-udu or Daud, which is the Oriental pronunciation of the name David. Thus the name of David, the first of the Hebrew kings, was not derived from Egyptian, but was of a pre-Babylonian or Sumerian origin. The third line said that the city over which David once ruled was Ud-nun-ki. This combination of signs was pronounced Adab. Thus a mass of information was contained in these three lines.

About a month later, while excavating at a distance from the north corner of the temple, a large substance entirely covered with clay, was found. As the dirt was cleared from it, a face appeared

beneath. It was the missing head of the statue, and when placed upon the broken neck, king David was complete. Thus we possessed a unique representation of the art of the early Babylonian sculptor. This oldest statue in the world is the only Babylonian statue which is perfect and in the round with the arms free from the body.

A large number of stone vase fragments, some of which were inscribed or engraved, bronze and stone tablets, bronze implements and objects of ivory and mother of pearl came to light in the various passages about the temple tower. The excavations were carried on outside the trenches in the chambers, which were probably devoted to the use of the temple priests. Along the northwest side only the foundations of the chambers remained, and nothing of consequence, apart from the fragments of stone vases, was discovered in them. Along the northeast side adjoining the temple platform was a grave which seems to date from an early Babylonian period. It had been rifled in ancient times, and there remained in it nothing but a thin

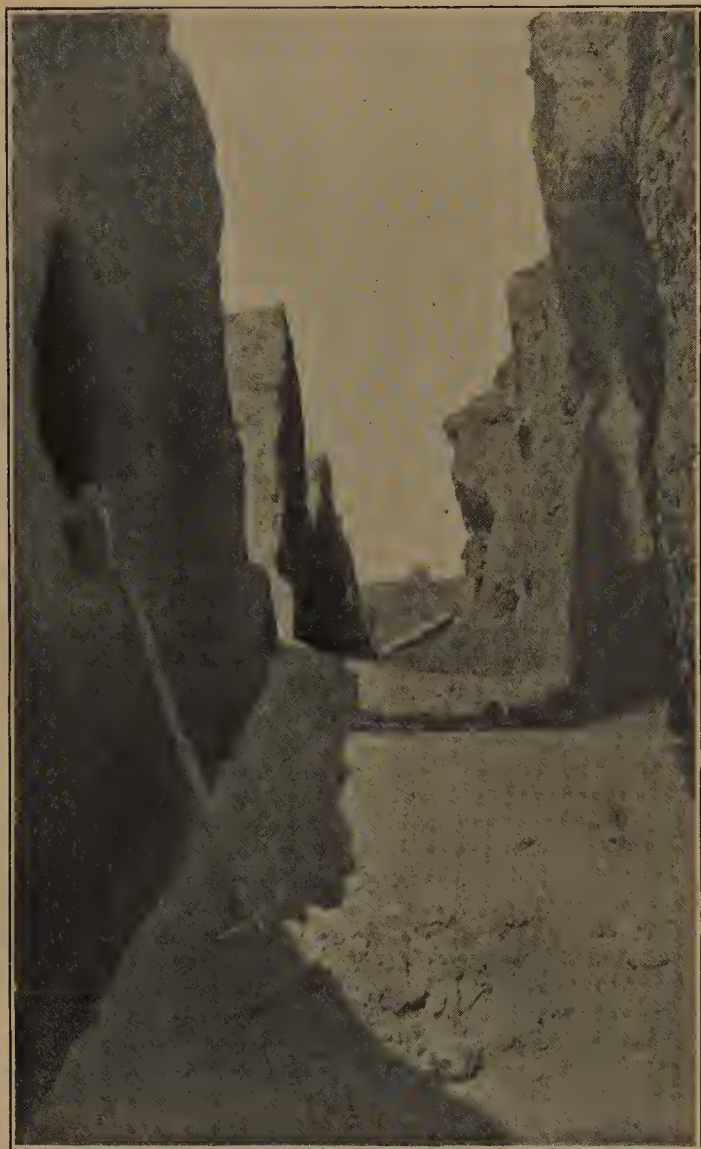


INSCRIPTION ON RIGHT
UPPER ARM OF THE
STATUE OF DAVID*



LARGE BURIAL URN IN THE BOTTOM OF A SHAFT

*Translation: 1st line, E-mah=Temple 'Emach. 2nd line, Lugal Da-udu=King David. 3rd line, Lugal Ud-nun-ki=King of Adab (Bismya).



STATUE OF DAVID WAS FOUND IN FORE-
GROUND OF THIS TRENCH, THE HEAD
AT THE FURTHER END

bottom. Along the southwest edge of the tower was a kiln in which the pottery and tablets employed in the temple service was baked. Near it were three vertical drains constructed of tile rings placed one upon another, and leading down to the sand of the desert level. They probably mark the site of the dwelling houses of the priests.

In addition to the statue of David and the gold of Naram Sin, the most interesting objects discovered in the temple hill were found at a distance from the northwest side, at the edge of the platform upon which the chambers of the temple were built, and just within the large encircling wall. It was the old temple refuse heap where the garbage and the discarded and broken objects employed in the temple service were dumped. In it were dozens of baskets full of fragments of

layer of ashes beneath the sand which had filtered in. Along the southeast side an entrance to the temple was found. The marble door socket, supported upon two beams of pink marble had been so disfigured that no traces of an inscription remained. At the south-corner was a peculiar oval shaped room, originally covered with a dome. Investigation showed it to be a place for cremation, probably a crematory for bodies of the dead. At one end of the chamber was a round platform, upon which the bodies were placed. Connecting with it was a furnace in an adjoining room, and beneath was a pit, into which the ashes were brushed. As we cleared away the rubbish which filled the pit we found about two feet of ashes mixed with the dirt at the



LION TERMINATING A BRONZE SPIKE

marble, alabaster, onyx, porphyry and granite vases. About 40 inscribed vase fragments were recovered. Other vases were engraved and inlaid with ivory and stones, and many of them displayed rare beauty in form as well as in material. This ancient temple dump presents our first view of the vessels of the temple service of 6,000 years ago, for the archaic characters of the inscriptions suggest that date.

Tunnels were dug into the base of the temple tower, and from them shafts were sunk, one from the very center, and another near the south-west edge of the tower, to the virgin sand of the desert level. In those shafts few objects which could adorn the show case of a museum were discovered, but far more remarkable or valuable results were obtained. Way down beneath the platform of the temple of plano-convex bricks, dating from 4500 B. C., we came upon large limestone blocks of a previous construction; still lower, we dug through various strata of ruins which may be defined as periods of occupation. Imbedded in the solid clay 5½ meters below the surface was a huge bronze spike terminating in a beautifully formed lion.

Even to suggest a date as its age would be difficult, so great is its antiquity. Still lower we dug through the various strata until we came to two huge urns placed one above another. In them appeared a mixture of ashes and sand. Way down on the desert level, below the strata represented in the accompanying diagram, down where the first settlers camped before the first temple was built, and long before the Semites ever came to Babylonia, was a thick layer of well formed pottery. The pottery was not built up by hand, but thrown on a wheel, and was baked to a black color.



PLAIN STONE VASES FROM BISMYA

The summit of the temple hill yielded inscriptions dating from 2750 B. C. Just below were inscriptions from 3750 B. C. A meter and a half lower was a platform from 4500 B. C. In digging through the upper $1\frac{1}{2}$ meters of the mounds we came upon ruins covering a period of 1,750 years. Who can tell the age of the various strata of the remaining 11 meters below, or guess the age of those first settlers whose pot fragments are still thickly strewn upon the sands of the desert level? One may suggest the date of 10,000 years B. C., and no one can well deny it, for it appears that even then the civilization of man was already ancient.

EDGAR JAMES BANKS,

Field Director of the Excavations at Bismya.



MOUND BUILDERS OF THE MISSISSIPPI VALLEY

MOUND builders of the Mississippi Valley, in the manner of the burial of their dead, were in close touch with those of the Valley of the Ohio; and had something in common with them; embracing the ideals displayed in the Ancestor Worship of the oriental, as well as antedating the custom of setting a granite shaft as a mark of respect over the graves of our departed at the present time.

Formerly Mound Builders were supposed to have been an extinct race, occupying the territory in which these numerous burial mounds are found, prior to the occupancy of the same, by the North American Indians; but in the light of more recent and more thorough investigation, it has been shown, that burial of the dead in mounds, has been practiced by the Muskwakies of the Foxes, who occupied the territory in this immediate neighborhood up to, and including some of the time, when the white people first settled in this section of the country.

The former erroneous supposition came about principally through the uncommunicativeness of the Indian; when questioned concerning the mounds and their contents, he would invariably act the stoic, for according to his ideas of Ancestor Worship, that subject was held sacred, and was not to be touched upon, nor were any of his belongings, which had been buried with him, ever in any manner to be used again by any living man. For this reason when shown flint arrow or spearheads, or other implements, which had come out of these burial mounds and asked concerning them, he would most likely say—"Indian no make him—we found 'im here,—when we came here."



MOUND BUILDERS POTTERY FROM MR. HERRMANN'S COLLECTION



SPECIMENS FROM MR. HERRMANN'S COLLECTION

The Conical mounds are generally individual or family burial mounds. The Muskwakies bury in a sitting position, the upper half of the body upright. The earth, sand, or other material, is carried there by the members of the tribe or the nearest of kin and filled



SKELETON OF PEOSTA

around the body to the height of the shoulder; the arms and head are left exposed, or above the filling. In addition, they build a hut over this of saplings and bank up the outside with sod.

Apparently the further this earth, sand, or other material, of which the mound is being built, is brought or carried; or the more laborious the work of carrying it to the highest points of the most inaccessible cliffs to the place of interment; the higher they consider the respect paid to the dead. In this they do not differ very materially from the white people. We would disdain to erect over a grave a shaft made from the limestone of the local Galena formation, but instead get a granite shaft shipped from Vermont or elsewhere, equally as great a distance and at as great an expense. As the 30 or 40 foot granite shafts in our cemeteries point upward, and onward,—like an index finger to the great beyond,—so also the conical burial mounds point up-

ward to the Indians' Happy Hunting Ground.

In the older mounds, it has been frequently found that there are several generations of the same family, or chiefs, buried over the top of each other; in each case, carrying the mound higher, so that they appeared to be 2, 3, or even 4 stories high; the lowest level, usually contains only one skeleton; the next probably 2, or possibly 3, the highest story sometimes 3, 4 or more skeletons. It seems that the chiefs and braves were buried in the highest and most prominent points of the cliffs nearest the river; while the rest of the tribe were buried in a less conspicuous place further inland. The chiefs of the Muskwakies were buried in a sitting position, facing toward the west; while many others probably less prominent in the affairs of the nation, were buried facing the east.

I am told, there is a similar custom prevailing among the Trappist Monks at Melleray, near here,—that the elders or fathers are buried facing the west, while the laymen or brothers are buried facing the east.

In digging for the foundation for the Julien Dubuque Monument* erected over the mound where Julien Dubuque and the Musk-

*See Frontispiece.

wakie Chief, Peosta, were buried, the skeleton of the chief, although known to have been buried over 90 years, was in such perfect state of preservation that the ear bones, stirrup, hammer and anvil, not thicker than a fine sewing needle, were in perfect condition.

The material of which the mound was built was of an oily, sandy nature, which led me to believe that it was brought from a great distance, in canoes, from up the river, probably the sands from the pictured rocks near McGregor, Iowa, or still further up from the Potsdam, and St. Peters Sands.

In this mound was found a small flat top catlinite pipe with a very small bowl, not nearly the size of a thimble; this was at first thought to have been used to smoke opium or other dope, but on investigating further I found it to be similar to a pattern frequently used by the inhabitants on both sides of Behring Sea and along the Pacific Coast. There were also found 10 or 12 small white sugar flint arrow points, all exactly the same shape and pattern.

Oriental influence among the Indians, along the Mississippi and Ohio Valleys, is everywhere traceable. If the Japanese at a very early time settled along the coast, now comprising Southern California, Mexico and Central America, it is easy to see that these courageous voyagers crossed the narrow neck of land, built canoes, and explored the Gulf of Mexico, and found their way up the Mississippi to St. Anthony's Falls; and the Ohio to its source, as these two rivers certainly must have been the highway of commerce carried on between the Indians of the north and those of Central America.

The finding of the famous Camel head pipe in my collection, found near Elgin, Iowa, would tend to strengthen this opinion. No one, not perfectly familiar with the camel and its habits, could have shaped this pipe the way it is. Not only does it present a perfect head of a camel, but it is also so cunningly fashioned as to represent the shape of a camel lying down, when viewed from a little distance.

Volumes could be written on the Mound Builders of the Mississippi Valley alone, but it would be impracticable for a magazine article to go into any lengthy detail.

RICHARD HERRMANN.

Dubuque, Iowa.



PETRIE'S WORK IN THE DELTA

THREE objects of search in the Delta have been regarded by Egyptologists as of prime importance: The location of early Greek settlements, paramountly that of Naucratis; that of Avaris, the Hyksos capital; and that of the town and temple of the High Priest Onias, which if not at Tell-el-Yahudich, must

be looked for elsewhere. In 1885-6 Dr. Petrie discovered the site of Naucratis and excavated exceedingly valuable relics of the days so graphically portrayed by Ebers in *The Egyptian Princess*, in which Naucratis figures conspicuously.

In one campaign, last season, Petrie, as I stated in the June issue of RECORDS OF THE PAST, achieved the other two objects. I now have further advices from him, of such special pertinence and interest that I make a few extracts:

"Here (the camp adjoining the temple site of Onias), at last, we have an actual work of the Hyksos people, to tell its own story. The camp is about 1,500 ft. across; the bank is about 200 ft. thick at the base, and was faced outside with a slope of white stucco 70 or 80 ft. long, at an angle of about 40°". He adds that "in a generation or two they made the skilled masons of Egypt build a great stone wall with about 80,000 tons of the finest limestone in large blocks from the Mohattam Hills, 25 miles distant."

What Petrie writes of the temple site has a Masonic flavor, specially for Royal Arch and Knights Templar followers:

"The mound of the town and temple covered an area of over 6 acres and rose to a height of over 70 ft. crowned by buildings reaching to 90 ft. above the plain. A great ceremonial of sacrifices took place at its foundation—probably a Passover feast. The temple and courts were a copy of the temple of Zerubabel at Jerusalem, which is known to have been smaller than the temples of Solomon and Herod; here it was just half the size of Solomon's temple."

Petrie says that "the masonry is of the style of that of Jerusalem, and not Egyptian. On the top was found a piece of the builder's account, showing bricks to have been delivered by a Jew named Abram. The details now found exactly correspond with all the statements of Josephus, and reconcile points in which discrepancies had been supposed to exist in his descriptions. Further, it is now seen that the form of this town was arranged to be a copy of the temple hill at Jerusalem, and that it was a New Jerusalem in Egypt."

The public awaits with interest the volume upon these valuable discoveries.

WILLIAM COPLEY WINSLOW.

Boston, Mass.



INDIAN RELICS AT JAMESTOWN:—In preparing the grounds for the Jamestown Exposition, workmen have unearthed numerous Indian arrow-heads, spear-heads and pieces of pottery. Many of the arrow-heads are broken. The site of the Exposition is known to have been occupied by the Powhatans, a powerful tribe of Indians.

A HISTORIC LOG CABIN

AMONG the most interesting "records of the past" are the accounts of the lives and surroundings of the pioneers of America. We are so new and generally so near the beginnings of our life as a nation that not enough interest and trouble have been taken to preserve such records. A delightful exception to this rule exists in the efforts made by Mr. John H. Patterson, of Dayton, Ohio, the head of that great manufacturing concern "The National Cash Register," who has taken infinite pains and spared no expense to have the original log cabin built by his grandfather, Robert Patterson, preserved in as near its original form as possible. This cabin, known as the Patterson Log Cabin, was built in the spring of 1776 and stood a little to the west of what is now the intersection of High Street and Broadway, Lexington, Kentucky. In it, according to the best accounts, the present city was named, but this was not done until later.

This Robert Patterson was noted for his courage and daring, and took part in many campaigns against the Indians. In various accounts of events in the West his experiences are recorded. In one of these he was wounded, and went home to Pennsylvania to recuperate. While there he became engaged to Elizabeth Lindsay, whom he married 4 years later, taking her back to the wilderness in Kentucky and to this cabin which he had erected. That was the founding of the home which was always one of love, though the dangers and hardships attending it were many. When the fighting was over for a time, Robert became a surveyor, and this gave him the opportunity to settle the record of lands taken up for himself and his father. In acres, these combined titles covered about 5,000, and "when he paid for it the price was estimated to have been about 40 cents an acre."

Fully one half the area of the present city of Lexington belonged to him. As the times became more settled, the block house and log cabin formed part of the young city, the Pattersons moved into a handsome stone house, and had this cabin taken to pieces and brought into a corner of the yard, where it was used as servants' quarters. Changes took place. The Pattersons "moved away, leaving their property in the hands of a man for whom Colonel Robert had become security." "During the century, nearly, which elapsed between the ownership of the cabin by Robert Patterson and its ownership by his grandson, John H. Patterson, 11 different people held the ground it stood on, . . . the last person being a certain Ormasinda Hayes, who sold the log cabin to John H. Patterson in 1901.

It was in September of that same year that it was taken down for removal to Dayton, Ohio, where its builder had located (nearly a century before) on leaving Kentucky. A few of the logs it was necessary

to replace, but most were in good condition, in spite of their 130 years of exposure to wind, rain, and frost. The timbers and stone of the foundation were placed on some of Mr. Patterson's land in Dayton, where they lay for some time. Once some of the stones were used in constructing a roadway, and when discovered were taken out and replaced by others. In May, 1904, the order was issued for its reconstruction. This was not an easy order to fill, as everything was to be done according to old-time methods. No nails were to be used, no mill work, and all the timbers necessary for replacing the worn parts was to be taken from land owned by Robert Patterson. The following are the orders issued for the rebuilding:—

Put on clapboard roof.

Old puncheon floor.

Stone and stick chimney, as nearly like the original as possible.

Have logs clear to the top of the roof, instead of boards.

Put rail fence around the house. (Rails that came from the farm.)

Cabin to front north. Location about 5 or 8 ft. east from hedge fence.

Foundation—boulder stone pillars on each corner.

Door of puncheon.

Windows—glaze with skins.

Get necessary logs to replace rotten logs and whatever else necessary.

Get clapboards, logs, skins, and any other material that may be necessary to put up the log cabin as it was, as nearly as possible.

The log walls and stone foundation were all that was left of the old cabin. The clapboards of which the roof is made were left over from building the first house in Dayton, and had for years been lying in Houck's lumber yard. Some fine old walnut logs were taken from the Patterson barn, which was being remodeled, and the lumber from these was used in making the door, window frames and shutters, all this work being done by hand with a broadax, and dressed with a drawing knife.

The site which was chosen has been associated with the Patterson family since Dayton was in the making. It is a triangular piece of land, formed by the junction of Main and Brown streets, and was originally loaned by Colonel Robert Patterson for school purposes, and for many years a little schoolhouse stood upon it.

Mr. Patterson's title to the land on which the cabin stands comes to him from the United States Government. From Colonel Robert Patterson it came to his son, Jefferson Patterson, and from him to his son, John Henry Patterson. Colonel Robert Patterson, by preëmption rights from Daniel Cooper and John Cleves Symmes, obtained 2,400 acres in that immediate vicinity, and the patent to this quarter section is signed by James Madison, President, October 5, 1816.

This mention of the name of John Cleves Symmes brings up an interesting bit of history involving many of the early settlers of this section in much worry and loss. Benajmin Stites, of Pennsylvania, formed a land syndicate to preëempt a territory comprising the south-

west quarter of what is now Ohio. John Cleves Symmes, a member of Congress from New Jersey, took of Stites the section known as "Miami Lands," comprising a million acres, and it is of a part of this section that Colonel Robert Patterson became the owner. History, however, does not say that he was compelled to pay twice for his land, as did some of the other early settlers, Symmes having failed to make good his contract with the Government.

Owing to the strong family feeling and pride in the courage and valor of his ancestors, and to a desire that such tangible evidences of it that remain should be preserved, have we left for our study this log cabin, typical of the hardships and simplicity of the lives so bravely lived, that those who came after should profit thereby, and each in his generation make the world a better place for succeeding generations.

Daniel Webster's eloquent speech during the Log Cabin campaign of 1840 may fitly close this brief sketch:—

Gentlemen, it did not happen to me to be born in a log cabin; but my elder brothers and sisters were born in a log cabin. Raised among the snowdrifts of New Hampshire, at a period so early that when the smoke first rose from its rude chimney and curled over the frozen hills, there was no similar evidence of a white man's habitation between it and the settlements on the rivers of Canada, its remains still exist. I make to it an annual visit. I carry my children to it and teach them the hardships endured by the generations which have gone before them. I love to dwell on the tender recollections, the kindred ties, the early affections and the touching narratives and incidents which mingle with all I know of this primitive family abode. I weep to think that none of those who inhabited it are now among the living; and if ever I am ashamed of it, or if I ever fail in affectionate veneration for him who reared it and defended it against savage violence and destruction, cherished all the domestic virtues beneath its roof, and through the fire and blood of a seven years' revolutionary war, shrunk from no danger, no toil, no sacrifice, to serve his country and to raise his children to a condition better than his own, may my name and the name of my posterity be blotted forever from the memory of mankind.



SUBMERGED TREES IN THE COLUMBIA RIVER

THE submerged forests just above the Cascades in the Columbia River can hardly fail to attract the attention of tourists who pass through the magnificent valley eroded by the stream across the axis of the Cascade Mountains, while to geologists the explanation of the phenomena is a matter of extreme interest. We can give no better description of the phenomena than by quoting the words of Major C. E. Dutton, for a long time a prominent member of the United States Geological Survey.

The Columbia enters the Cascade barrier 3 or 4 miles below the Dalles. The platform of that range here has a width of 80 miles. From the Dalles

to the Cascade Locks, a distance of over 50 miles, the Columbia River flows as a broad, deep, quiet stream, with a sluggish current at low water. Its course resembles that of the Hudson through the Highlands; and this fact is at once suggestive, because the passage of rivers through mountain ranges is generally swift, and broken by many rapids. If it is otherwise, there is almost certainly an interesting reason for it. The Cascade Locks are situated almost exactly on the axes of the cascade range. Here is a cataract which has always been an insurmountable obstacle to navigation; for, within a distance of a few hundred yards, the river makes a descent of about 30 ft. The government is now building a short canal with large locks, to enable steamboats from below to reach the still waters above. Beginning at a point about a mile and a half above the cataract, the traveler, as he sails up the river, observes many old stumps protruding from the water and from the sand banks, laid bare during the low stages of the river. They are seen for a distance of 30 miles, recurring at frequent intervals, here clustered thickly together like the piles of an old wharf whose superstructure has decayed and vanished, there with wide intervals between them. During high water these tree-trunks are entirely submerged. An examination of the wood serves to identify them with the living species of fir which form the forests upon the mountains and cliffs round about.

These submerged trees, together with the long still reach of water above, at once suggest that an obstacle has been placed athwart the stream, forming a dam which converted the river valley above it into a long, narrow lake, and that the rising water submerged an old forest of which these trees are the vestiges. Indeed, this is the only explanation which suggests itself. It is strongly corroborated by many other circumstances which may not be enlarged upon here. No geologist who has visited the locality has ever doubted, so far as I know, that this is, in general form, the true explanation. The only question which arises is about the nature of the obstacle which has dammed the river.*

Of the three explanations given we will note, first, that of Major Dutton, who supposes at the Cascades a post-glacial "uplift of the entire platform athwart the river valley in the shape of a very flat anticlinal arch. The width or span of this arch is about $5\frac{1}{2}$ miles, and the eastern branch of the flexure is steeper than the western." The river has now cut a gorge so far through the lower part of this obstruction that "it will probably require not more than a century or two for it to have cleared a passage deep enough to drain the slack-water reach above. The work of cutting a passage through the obstruction $5\frac{1}{2}$ miles in length is nearly complete" (p. 83). Major Dutton's supposition is that this obstruction was formerly much higher than now, having been much lowered by the action of the river, and that, when it was at the former height, sediment had accumulated above the obstruction so as to bury the forest, and so preserve it from decay until, through the lowering of the stream, it is now being uncovered.

Dr. S. F. Emmons, of the United State Geological Survey, objected to this theory on the ground that an earth movement such as Major Dutton supposes along the axis of the Cascade Mountains could not easily be supposed to have proceeded more rapidly than the corrasion of the stream in lowering the obstruction, and "then con-

*Science, 1887, vol. ix. pp. 82-83.



SUBMERGED TREES ABOVE THE CASCADE OF THE COLUMBIA RIVER, IN
LOW WATER

veniently have stopped, so as to allow corrasion to gain its former ascendancy over the earth movement." (Vol. IX, p. 157.)

As a counter theory, Dr. Emmons gave prominence to a tradition, widely circulated among the Indians and Hudson Bay trappers, which relates that "there once existed a natural bridge at the Cascades, and that the ancestors of the present tribes (probably at no very distant period) used to cross the river here dry shod" (p. 156), and that this bridge at length collapsed through the effect of the undercutting of the stream, and so formed the obstruction which now causes the Cascades. So generally disseminated is this tradition that it is made to play an important part in a popular novel, whose scenes are mostly laid in that region. But the theory can be best stated in Dr. Emmons' own words.

At the time when the general cutting of the Columbia Valley had reached about the level of the present flood-plain at the Cascades, through some crack or other natural opening its waters found a passage into the underlying conglomerate bed, which, being permeable, allowed a passage of this water down stream to a point in the bed itself where it outcropped at or above the level of the lower part of the stream. Such a passage, once established, would be rapidly enlarged by the force of such an overlying mass of water as the Columbia River; and to those familiar with the corradng force of water, as shown in the stream action of western rivers, it must readily be apparent that it would soon become large enough to take in the whole stream; that thus for a certain distance the whole Columbia would run underground, like the so-called "Lost Rivers," which are still found under the basalt flows of the Snake River plains. Thus would have been formed the natural bridge spoken of by the Indians. Moreover, by this lowering of its bed at this point, the bed of the river above



BOULDER BED IN THE CANAL NEAR THE WEST END

would have been correspondingly lowered, and tree-growth would have gradually extended down to the water's edge, as it does at present.

Meantime the corrasion of this underground stream would gradually wear away the supports of the overhanging sheet of basalt, until at length they became inadequate to hold it up; and when they fell, the underground passage would have been suddenly filled, the river dammed up to the present level, and the stream also backed up so as to cover the roots of and thereby kill the trees along the lower part of its banks. Such is essentially the present condition of the stream, for the broken masses of the basalt which form the present stream bed at the Cascades resist the wearing-away of the water better than did the conglomerate, and the river above the cascades still stands at a higher level than it did before the falling-in of the basalt bridge. (p. 157.)

The third theory is one presented by Dr. J. S. Newberry, who visited the place in 1855, in connection with the Pacific Railroad survey, and is one which Mr. S. Prentiss Baldwin and I were independently led to adopt when we visited the region in 1890, and of which the accompanying photographs (never before published) seem to be a complete demonstration. According to this theory, the Columbia River had, before the growth of the buried forest, cut a gorge completely through the obstruction presented by the anticlinal arch referred to by Major Dutton; so that there was a gradual descent all the way from the Dalles to the section of the river which is below the Cascades. But this channel, where it was comparatively narrow at the Cascades, was finally obstructed by an immense landslide from the south, which turned the water of the river into its present course over the rocky bed which forms the Cascades. According to this supposition, the trees which had grown down the bank covering the old



SEDIMENTARY BANKS OF JORDAN, 100 FT. HIGH AND LIABLE AT ANY TIME TO SLIDE INTO THE RIVER

lower flood-plain above the Cascades were submerged and killed as they frequently are in reservoirs made by artificial means.

Since the trees are still undecayed, it would follow that their submergence did not occur more than 100 or 200 years ago, for this longer period is the extreme limit that could be allowed for wood in that wet climate to resist decay. Some such date as this also must probably be given to the origin of the tradition referred to, which might naturally arise, even though there was no complete natural bridge at that time, as Professor Emmons supposes. For, according to this theory, the wide expanse now covered by the water as it falls over the Cascades was high and dry, bordered merely by a comparatively narrow channel on the south side. Furthermore, for a brief period, after the landslide there would be a dry passage completely across until the vast reservoir above was filled.

This explanation is supported by the fact that below the Cascades the land on the south side along which the railroad runs is constantly sliding into the river, so as to occasion great solicitude to the engineers who are looking after the safety of the roadbed. Upon going back into the forest between the railroad and the precipitous face of the mountain one finds immense long crevasses which have been formed at various times by the slipping down of the whole bank. Finally the accompanying photograph, taken by Mr. Baldwin, in the canal bed when under construction, actually exposes this old channel. It was evident that if the canal had been dug a little farther to the south there would have been no rock obstruction. Professor Newberry's

original theory, therefore, seems to be sufficiently well supported to be accepted and taught as a doctrine.

In addition to the interest which in itself pertains to this phenomenon in the Columbia River, it is of special significance, as illustrating the Biblical story of the way the children of Israel crossed the river Jordan, where the phenomena as described are closely analogous to these in the Columbia River, except that in the Columbia the dam produced by the landslide was permanent, owing to the hardness of the rocky obstruction over which the water was compelled to go, while in the case of the Jordan, there being no rocky obstruction, the former level would be soon resumed after the obstruction was once surmounted by the water. According to the account in Joshua, "the waters which came down from above stood, and rose up in one heap, a great way off, at Adam, the city that is beside Zarethan; and those that went down toward the sea of the Arabah, even the Salt Sea, were wholly cut off. . . . And the people hastened and passed over. . . and the waters of the Jordan returned upon their place, and went over all its banks, as aforetime."

This sequence of events is just what might have been produced in the valley of the Jordan on the occurrence of the facts similar to those involved either in Major Dutton's or Dr. Newberry's theory to account for the submerged forests of the Columbia. On Major Dutton's theory, a gentle anticlinal arch of 15 or 20 ft. thrown across the valley of the Jordan by an earthquake would furnish the temporary obstruction necessary to set the water back to Zarethan; while the softness of the sedimentary deposits which fill the valley of the Jordan would permit the river speedily to resume its former gradient.

But the conditions more precisely fit the theory of a landslide; for the valley of the Jordan, about 15 miles wide, is filled to a great depth with unconsolidated sedimentary deposits which accumulated when the water in the valley stood several hundred feet higher than it does now. Through this sedimentary deposit the Jordan cut a narrow gorge, or *ghor*, as it is called, to a depth of from 50 to 100 ft., and a varying width of a few hundred feet. The bottom of this *ghor* is occupied both by the river and by the flood-plain, which is covered by water when the "Jordan overflows all its banks." As this *ghor* is constantly growing wider through the action of the river as it swings from side to side and impinges against its banks, it must have been considerably narrower 3,000 years ago than it is now. But even now it would not be at all impossible for the landslide temporarily to obstruct the channel, as it is supposed to have done in the time of Joshua.

It is thus that geological records may render credible, and aid us in understanding, historic records that at first sight seem improbable.

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.

THE PALESTINE EXPLORATION FUND

THE missionary has often been so useful in archæological exploration that on that account alone his foreign residence is justified. In Palestine, not to speak of other countries, much information of the most intelligent kind has been given by Eli Smith, Thomson, Van Lennep, Post, Porter, and others. To this list we must now add the name of Dr. Franklin E. Hoskins, who accompanied Professor William Libbey of Princeton University on the trip through Gilead, told of in their book, *The Jordan Valley and Petra*. No one understands better than the missionary how to select the best native helpers, to deal with the people along the route, and to tell what others have not told. It is his business to study the conditions of his mission, and to see at the same time how to extend it, and thus his scientific explorations naturally connect with those which he makes into the moral, commercial and physical state of those to whom he is sent.

With no avoidance of difficult paths, without friction with officials, with ever watchful eyes for traces of the past, and with the commendable object of getting better photographs than others had got, Messrs. Libbey and Hoskins rode 600 miles, enjoying every step and providing enjoyment for their readers. Starting from Sidon they went to the sources of the Jordan and then turned southward, investigating the Jordan Valley at many points, and also passing through Gadara, Jerash, Madeba and Kerak down to Petra. All that they say of these places is of value, but Petra gave them their best opportunity to add to Biblical knowledge, for there they found and carefully described a second "high place," so that their work at Petra and that of the Palestine Exploration Fund at Gezer have made us to understand fully this form of idolatrous worship, so often mentioned in the Old Testament and always condemned.

The work of Mr. Macalister at Gezer is to be popularly described in a volume called *Bible Side-Lights* which the house of Hodder and Stoughton is bringing out for him. It has 48 illustrations, and treats of the recent excavation as throwing light on the Scriptures, especially on the inhabitants of Palestine in the time of the Patriarchs, their idolatries, houses, burials, city walls, crafts and customs. This is precisely the book needed to show the importance of excavation to knowledge of the Bible and the verification of its historical statements. Mr. Macalister has been as fortunate in his field as Mr. Petrie in Egypt, and this is saying a great deal.

THEODORE F. WRIGHT.

Boston, Mass.

EDITORIAL NOTES

NATIONAL MUSEUM OF MEXICO:—The Mexican Government has authorized the erection, on the site of the old Orphan Asylum, of a new building to house the overflow from the National Museum, now kept in the Palace. On the ground floor will be the archæological section and part of the history department. The upper floor will be devoted to paintings now in the school of fine arts.

TEMPLE OF ARTEMIS, NEAR SPARTA:—London dispatches report the announcement of the discovery by Dr. Rosanquet, under the auspices of the British School of Archæology at Athens of the famous temple of Artemis, on the banks of the Eurotas river, near Sparta. This temple is supposed to be that of Artemis Orthia, the religious center of ancient Sparta, standing, according to Pausanias, in the district of Limnæ.

IMAGE OF A HORSE AND CHARIOT FOUND IN ZEALAND:—In a bog in northern Zealand an image of a horse was recently found. It is of bronze, apparently of early date. The horse is 10 in. long. He is on wheels, and draws the sun, also on wheels. The sun image is ornamented with spirals. This seems to have been intended as an offering to some divinity, and was placed in the lake, which has since dried up.

EARTHWORKS ON WHITECASTLE HILL, SCOTLAND:—This group of apparent earthworks consists of 5 separate works in two divisions, about 40 ft. apart. In the first the main fort is oval, 270 by 250 ft. surrounded by a rampart and ditch. An oblong outwork 105 by 80 ft. enclosed within two ramparts with an intervening trench is close by. The curvilinear works were evidently built for defence. The rectilinear works, on the other hand, appear to be indefensible, but their purpose is not known.

ROMANO-BRITISH RELICS IN WINCHESTER:—The region in and around Winchester is rich in Romano-British relics. As many of these relics have to do with burials and Roman law forbade interment within towns or cities, it is probable that this was a cemetery. In December last two elegant vases were dug up near a railway arch. Cinerary and votive urns have been found at various times. One, in perfect condition, is in red Salopian ware. The other was broken when found, but is capable of being mended. It is a one-handled vessel in what is apparently New Forest ware.

MASTODON REMAINS FROM OHIO:—Twenty-five years ago there were found, near Cisco station, Fayette County, Ohio, a mastodon tooth and a portion of a tusk, presumably from the same animal. The tooth was protruding from the bank of a stream. It is $9\frac{1}{2}$ in. long, 5 in. wide, and 6 in. high. The enamel is worn by use in life, and cracked by falls. The tusk soon crumbled and disappeared. Superficial investigation revealed no other portion of the skeleton, but a thorough search, which has never been made, might bring more of it to light.

NECROPOLIS OF GROBBENDONCK:—While some lands was being cleared for the Count Adrien D'Ursel in 1904 on his estate of Grobbendonck, in the district of Antwerp, Belgium, a series of cinerary and votive urns and vases was found. They were hand-made, without turning. Following a Belgium custom previous to the Roman conquest, the urns contain smaller ones. These have been given to the Royal Museum at Brussels. This necropolis belongs to the iron age. It is situated upon the highest point of land, in the valley of the Nèthe.

HEART OF RAMESES II:—It is reported that 4 ancient Egyptian vases containing the viscera of Rameses II have recently come into the possession of the Louvre. The contents of 3 of them had been reduced to powder, and could not, therefore, be identified. The other contained a hard slab. French scientists had it sawed into sections and examined thin shavings of it under the microscope. These horny fragments showed muscular fibers in the formation found only in the heart and tongue. Hence the conclusion is drawn that this 3 by $1\frac{1}{2}$ in. slab is nothing else than the heart of Rameses II, who died 1258 B. C.

EXCAVATIONS AT ABYDOS:—Mr. Garstang finds work enough at Abydos to occupy him for 4 or 5 years, although others have supposed the field exhausted. He hopes in that time to clear the site. "He has obtained many objects from the Hyksos times at Esneh; and from the scarabs and other small antiquities there discovered hopes to put the chronology of that much-vexed period on a satisfactory footing." The most important of his finds was at "Kostanneh, in Nubia, where he discovered an entire necropolis as it was left by its last users, and from this proposes to throw fresh light upon the origin of the predynastic civilization." He tries to show the "original birth-place of the black-lined pottery sometimes called predynastic, and to correct the system of so-called 'sequence-dates' in several important particulars."

TRANSLATION OF AN EGYPTIAN PAPYRUS:—Prof. Golénischeff in M. Maspero's *Recueil de Travaux* has translated an

Egyptian papyrus belonging to the hermitage at St. Petersburg. It is hoped that he will later translate other manuscripts in the same Museum, which have up to this time been inaccessible for the majority of Egyptologists. The manuscript in question is one of those folk-tales in which the Egyptians delighted. It "set forth how a mariner, while sailing in the neighborhood of Punt, was shipwrecked and cast upon an enchanted island, the king of which was a mighty serpent, who, upon receiving promise of worship, dismissed him to his own country with assurance of protection and a whole shipload of presents for the reigning Pharaoh." Prof. Golénischeff points out many analogies between this tale and that of Sinbad, and certain episodes in the *Odyssey*, but M. Maspero thinks the resemblance far-fetched.

A NEW RESTORATION OF THE LAOCOON GROUP:—When the famous Laocoön group was found and restored there was some discussion as to the original position of the missing right arm. In the restoration then made, the arm was extended in the air. A recent discovery in a second-hand statuary store in Rome has made it possible to restore the group more accurately. On January 14, Herr Ludwig Pollak reported to the German Institute the finding of a fragment which he believes belonged to a copy of the Laocoön group. Just where the fragment was found the second-hand dealer was unable to state. It is part of an arm, bent at the elbow, so that the hand would rest against the head. Following this suggestion, a new restoration has been made. Laocoön's suffering is thus made to appear more intense and the piece gains in artistic composition. This recently discovered fragment was evidently not part of the group now in the Vatican, but of a slightly smaller copy.

ETHNOLOGICAL SURVEY OF CALIFORNIA:—The Department of Anthropology of the University of California has recently completed an investigation of the geographical distribution, tribal divisions and dialects of the Yokuts Indians of the San Joaquin valley and Tulare basin. Dr. A. L. Kroeber, who has been at work on this for some time, has just returned from a final trip to this region. Sixty years ago the Yokuts inhabited all the valley and foothill lands between the Chowchilla river and the Tehachapi pass. There were 40 distinct tribes, speaking different, but related, dialects, proving the original unity of this group of tribes. More than 15 of these tribes have become extinct, and others are represented by single individuals only. Dr. Kroeber has recorded more than 20 dialects, which will be preserved for the study of anthropologists and linguists. It is expected that a full report will soon appear in the University of California Publications on American Archaeology and Ethnology.

PEDESTAL OF A VOTIVE STATUE OFFERED TO THE BONA DEA:—Considered by itself, this pedestal discovered in the

Transtevere near the junction of the Viale del Re with the Piazza Mastai, is of little value. It bears the inscription, "Theogenea, wife of C. Rulilius, offers this image to the Bona Dea, in accomplishment of a vow." The interest in this comes only when it is referred to the shrine of the same goddess found near the same spot in 1744. "The shrine is described by Bottari as a '*tabern acolino*' sheltering an altar and a spring, with 3 inscriptions stating that it had been erected by order of Marcus Vettius Bolanus, the owner of the estate (Insula Bolani) under the care of his agent Cladus." Bolanus was one of the earliest governors of Brittannia and a consul suffectus under Nero. Bona Dea's protection was evidently invoked largely by people suffering with ophthalmia; another inscription, discovered in 1861, mentions the recovery of eyesight through her intercession.

MOSAIC PICTURE OF A HUNT:—On April 24, the City Antiquarium at Rome was open to visitors. It has been enlarged recently and many new works of art added. One of its treasures is a "mosaic picture of a hunt, with life-size figures of men and beasts, discovered not long ago within the area of the Licinian Gardens, near the Church of Santa Bibiana. The section of this great picture exhibited in the Antiquarium represents about 3-5 of the original composition: the other 2-5 are still lying underground, and cannot be taken up unless the two railway lines which run over this part of the Horti Liciniani are removed." This mosaic is third in size of those in Roman museums, being 70 by 30 ft., while the "Mosaic Antoniniani" taken from the Baths of Caracalla covers almost twice the space. The mosaic floor discovered in the Thermæ of Otricoli is the other which is larger. The details of the scene, which represents the gathering of beasts from all parts of the world for the *venationes* of the amphitheater and for the stock kept in the *vivarium* make this latest the most interesting. "The mosaic shows the various devices used to entrap the beasts: We can see the gazelles forced to run into a corral surrounded by nets; wild boars harassed by mastiffs; and bears tempted to enter the cages (concealed by shrubs) by the exhibition of a huge piece of raw meat, while the venator, crouched on the top of the cage, is ready to lower the trap door."

HOPI SHRINES AND SPRINGS:—Dr. Fewkes in an article on *Hopi Shrines near the East Mesa*, calls special attention to the value of careful observation and the study of these shrines for the advancement of Hopi archæology. In conclusion he says:—

Ownership in shrines and springs, like that in eagles' nest, is hereditary in clans among the Hopi. The right to a spring is one of the most ancient of all ownerships in realty. So sacred are these places to the Hopi that they are associated with tribal gods and clan tutelaries; consequently, proprietorship in them is not abandoned even when the clans in their migrations seek new building sites.

It is desirable that those engaged in the study of Southwestern archæology

should pay particular attention to the shrines in the immediate neighborhood of ruins, and where possible, gather all significant information regarding their use in modern times or since the ruins were deserted. This knowledge, taken in connection with legends of migrations, will aid in an identification of clan affiliations of former inhabitants of our Southwestern ruins. Although in most instances these shrines are now little more than rings of stones, occasionally an offering is found in them that reveals the presence of reverence in some mind, and it is generally true that the one who made this offering is related in some way to former inhabitants of the neighboring pueblo.

WORK AT CAERWENT IN 1905:—During 1905, five houses or blocks and the recently discovered gate in the south wall of the city were explored under the superintendence of Mr. T. Ashby, Jr., of the British School at Rome. One of these blocks was remarkable for the presence of the remains of a colonnade with 7 columns of uncertain use. "In another house there was found an octagonal tank with a tessellated floor and cemented walls, which was probably a bath; and the whole building . . . is probably part of the same building wherein was found the large hypocaust, which is still open for inspection. The whole may possibly have formed part of a system of public baths." In still another house one of the walls of a room was preserved to the height of 14 ft., and some interesting bits of plaster remain. "The south gate is extremely well preserved; the larger part of one ring of the stone arch being intact. It differs from the north gate in some important details." Both were blocked up, but here the filling is of a better character and more deliberately constructed. "There are also the remains of two large stone drains, and possibly of two roads, one overlying the other." Among the objects found were "iron spear-and arrow-heads, knives, a bronze piped key, a part of a small clay statuette of Venus, a little bronze sphinx, a perfect bowl of a ware that appears to imitate Samian ware and a collection of plant seeds and animal bones that have been recovered from the earth taken from pits and wells."

PUEBLO ENVIRONMENT:—*Science* for June 8 contains an interesting discussion of *Pueblo Environment* by Dr. Walter Hough, from which we abstract the following:

In the investigation of the habits and customs of the Pueblo Indians, the study of the natural environment is an important element. The latitude, elevation and natural barriers of the southwest produce important modifications in climate, as is shown by the convolutions of the isotherms of 50°, 59° and 68°, by the scanty rainfall, by the extremes of day and night temperature, by the high winds and the rarefied air. The fitness of this region to sustain life depends mainly upon the rainfall, which is unequally distributed. The mountains covered with vegetation store moisture while the bare lands below shed it into swollen streams which disappear shortly after the rain ceases.

The flora of the region is, however, capable of supporting an extensive fauna and even man. The plants are adapted for storing

moisture and for protection from the fierce rays of the sun. Protection from the harmful violet rays is especially necessary. The nocturnal habits of certain animals and the color of the Indians may be counted as adaptations for protection in this direction. The appearance of the white man has modified this environment to a great extent. Immense herds of cattle, horses and sheep were introduced so that the pasturage was over-crowded and the grass disappeared, leaving the land so bare that the thin layer of good soil was soon washed off. A more disastrous result of this destruction of the vegetation was the drying up of springs.

Man in this new environment has had to wander from place to place. Probably at first the tribes were confined to the mountain region and then later spread down the water courses where they gradually took up the culture of maize. They attained superiority over the environment. North of the ridge crossing southern Arizona and New Mexico, the more primitive forms of irrigation are found, "that is by simple canals diverting water from streams to the nearest land and by warping or spreading by means of slight temporary barriers a fan of water from a point in the stream where the bank and bed of the stream are at a uniform level." South of the water-shed trunk and lateral canals were employed by the Indians.

WISCONSIN ARCHEOLOGIST:—The number of the *Wisconsin Archeologist* for the first 4 months of the present year consists of a report on the *Archaeology of Eastern Sauk County* by A. B. Stout. This region is rich in mounds, but there is a relative scarcity of implements. The mounds are of several forms, the largest number being tumuli but there are also many effigies. The effigies most frequently represent birds or bears, though there is one "man" mound and several of the "mink" type. One of the effigies showing most resemblance to the animal copied is a deer mound. The antlers are well defined, although only 3 in. high. The entire length of this mound is 135 ft. One of the bird mounds has a wing spread of 300 ft. What is thought to be the largest tumulus in the county is 13 ft. high and 60 ft. in diameter.

In a few of the mounds which have been excavated portions of skeletons have been found, some of them with evidences that the bodies were buried in a sitting posture. One mound opened by Mr. Stout and two others is described as follows:—

Five feet from the center and at a depth of 4 ft. and 2 in. were found several charred sticks measuring $3\frac{1}{2}$ ft. long and 4 in. in diameter. They extended to a bed of charcoal 1 ft. thick and 5 ft. in diameter, the whole slightly north of the center of the mound. A layer of soft reddish loam several inches in thickness was distributed irregularly above and below the charred sticks; otherwise the material of the mound was a rich, black loam. On a level below the charcoal, but nearly in the center of the mound, were discovered a tooth with fragments of skull, arm and pelvic bones. Extending from these to the northeast were traces of a femur bone. Evidently the body had been placed in a sit-

ting position facing east, some dirt piled around the body and then a fire built above the legs and in front of the trunk. The charred but intact sticks would seem to indicate that the fire was covered with dirt before the fuel was consumed. No artifacts were found.

A few pieces of pottery were reported.

The Sauk County Historical society as an auxiliary of the Wisconsin Historical Society is doing its share toward preserving the antiquities of the state by looking after the archæological relics in its own country. Such auxiliary societies have an important field before them in arousing local interest and diffusing the knowledge of the value of prehistoric as well as historic remains.

BURIAL CUSTOMS OF THE WA-KAVIRONDO IN THE KISUMU PROVINCE, EAST AFRICA:—When a Kavirondo dies he or she, as the case may be, is stripped of everything in the shape of clothing and ornaments, and these, as a rule, are distributed amongst the children, should the dead person have any; if not, they are taken by the near relatives. As soon as the person has expired the relatives in the same "boma" commence howling and crying, and in some cases this is done before the sick person has expired, but is close to death.

The first persons informed of the death are those relatives and friends residing close at hand, who arrive quickly to join in the mourning and to do their share of crying.

The relatives and friends from a distance begin to arrived decked out in all their finery, bringing food for the dead, and also some of their cattle, as a rule a few cow and bull calves. The mourning lasts for about a fortnight, but the body is kept only for about 5 hours after death, when it is buried underneath the floor of the hut of the dead person; but should several people have been buried there before and no space left, the body is buried just outside the hut, on the left-hand side.

As a rule, after one person is buried in the hut, if it is intended to bury a second, and even a third person in the same hut, it is customary to knock out the back part of the hut and enlarge it.

The Kavirondo belief is that the dead can hear, and this is their reason for burying their dead in and close to their huts, as they like the dead to hear what they say.

The grave is dug about 4 ft. deep and is circular, and the dead person is put there in a doubled-up position. The body is buried quite naked, but sometimes the skin on which the person slept, or which he wore, is placed at the bottom of the grave.

When the grave is filled up, the earth is put back in small pieces, and is pressed tightly down, so that when all the soil is put back the surface is absolutely level, and to the casual observer it would not appear that the soil had been disturbed. As a precaution against hyænas and other wild animals a species of cactus is placed for a few days over the grave.

Should the dead person be a grown male, the wife or mother or nearest relative of the dead man will cry continually for three months for about an hour before day break, but will stop when day breaks. . . .—[A. S. Millikin, in *Man*, London, for April, 1906.]



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PART IX



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D. D., LL. D., Editor



MR. FREDERICK BENNETT WRIGHT,
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THE SOUTHWEST FLANK OF THE MOSQUE [FIG. 2]

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SEPTEMBER, 1906



THE MOSQUE OF ISA BEY AT EPHESUS

WHEN I was at Ephesus during the British Excavations, 1904-05, there were facilities for my studying the beautiful mosque reputed to have been built about the year 1340 by Isa Bey, nephew to Chidr Bey, Governor of Ephesus. It is wonderful how holy sites are perpetuated, and here we have an excellent example. Creeds, forms and ceremonies may change with the ages and peoples, but religion remains rooted to the soil.

Let us look at our first illustration, which is a general view of Ayassouluk (a Turkish corruption of *Αγιος Θεολόγος* "The Holy Word") now a small Yuruk hamlet is built on the site of what may have been the Primitive Ephesus before it was removed by Lysimachus to the new site below Mount Prion and under the shadow of the precipitous and castellated Mount Coressus. In the foreground is seen a large tree, and just beyond to the right and left are some light colored stones and a bank showing the site of the great temple of Diana, dating from heroic prehistoric times down to about A. D. 267, when the Goths sacked and laid waste the city. But soon another great temple was erected by the Christian Emperor Justinian in the year 530, in honor of St. John the Divine, who resided at Ephesus, two years before his greatest achievement—*Sancta Sophia*, in Constantinople.

Evidently at this time the low land was unhealthy, and an elevated site was chosen. The position is between the Gate of "Persecution" and the fortress: The ruins may be seen on the skyline to the right of the mosque, one great mass of brickwork stands on end

split open by a tree and a little more massive brickwork can be discerned to the right. In process of time the cathedral must have suffered from earthquake, and probably our mosque builder used it as a quarry for his beautiful face, as Justinian's architect evidently had the ruined Artemision, it being easier to lower the building stones from above than raise them from below. Not far from the mosque are several remains of baths and tombs, showing that the Seljûks built and settled permanently at Ephesus for several centuries. About



INTERIOR OF THE NORTHEASTERN WING OF THE MOSQUE
[FIG. 3]

50 years ago a colony of Greeks from Kirkinje settled on the rising ground to the right, that is, southward of the gate of "Persecution," and built themselves a small unpretentious church adjoining their former glorious cathedral. This little white church may be seen with one tall cypress standing in its court yard.

Ephesus was wrested from the Byzantine Empire in the year 1116 by the Seljûkian generals, and although recovered by John Ducas and Theodore Lucaris it finally came under Mohammedan rule at



GENERAL VIEW OF AYASSOULOK (EPHESUS) [FIG. I]

the beginning of the XIV century. The Crusading Barons, though firmly settled in Smyrna, seem never to have been able to lay their hands upon the fertile valley of the Cayster.

The Mosque is quite Seljûkian, showing perfect knowledge of the building and decorative style of that period, everything being carefully exact with no striving after an ideal, which is traceable in the building up of a style. It resembles in many ways its relatives in Konia (Iconium) the capital of the Seljûkian dynasty and Brûsa (Prusa), the early Turkish Capital. Again looking at our first illustration we see the southeastern face over the big tree and the southwestern flank built of white marble to the left, under the castle, shown better in our second illustration. The brick minaret rises quite unsymmetrically on the left and rear of the Main Portal, the mosque proper being on the right hand and the wall to the cloistered court to the left. Entering we find ourselves in a ruined court-yard extending in front of us and to the left, but to the right is the rear wall of the mosque. Walking to the center we enter the building by a ruinous doorway, and see soaring above us two grand domes and the "Michrab" or holy niche recessed in the end wall.

Our third illustration shows that the wings to the left and right are identical, though now destitute of their roofs, but the gable ends still stand on the flanking walls, showing that these portions were roofed laterally with double high pitched timber gabled roofs.



INNER FACE OF UPPER WINDOW IN
THE CLOISTER COURT OF THE
MOSQUE [FIG. 6]

Four columns supported the whole of the interior superstructure; the brick arches still remain dividing each of the wings into double long compartments. Luxurious vegetation has sprung up in both these wings, one fig tree even rising to the height of the capital and picturesquely clinging to the granite shaft.* The granite columns were evidently taken from the great gymnasium built by the Romans 3 miles away in the Hellenistic City. Other gymnasium columns now adorn the Suliemaneh mosque in Stamboul, having been taken from Ephesus in Christian times to adorn the Church of St. Euphemia at Calcedon near Constantinople. This church was destroyed during or before the Suliemaneh was built in 1550. The capital seen in our illustration crowning the column of the left hand wing evidently belongs to the shaft, it being of the Roman Composite order, the other capitals are of the

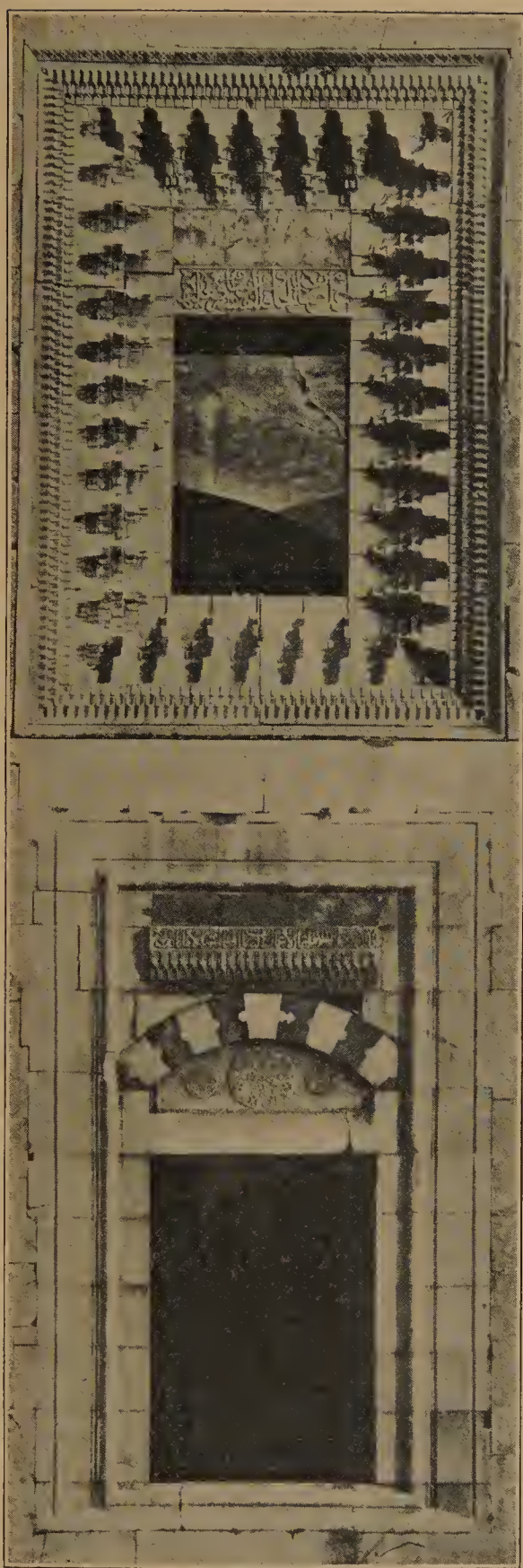
usual Seljûkian pattern. The abacus to each is sculptured with ornamental cufic writing.

Retracing our steps to the two central bays we see that a little of the turquoise blue faience still clings to the pendentives below the cupolas. It is now of course difficult to say to what extent the faience covered the mosque, but certainly the wall containing the "Michrab" would have been covered as well as the octagonal drums and the pendentives to the domes.

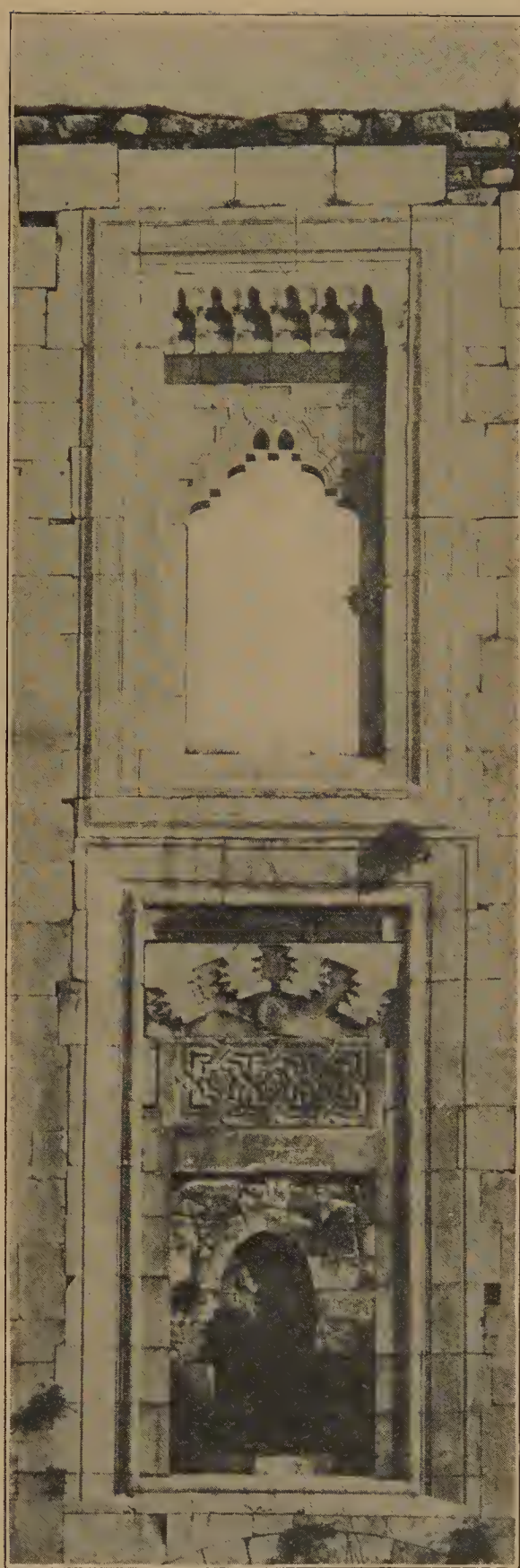
Leaving the interior we return to the ruined court, here there is nothing standing but the naked outside wall. A flight of steps leads up to a gateway opposite the portal we entered by, and in the center of the wall facing the mosque is a small postern.

The whole of the cloister arcading has fallen, but here and there antique capitals and portions of columns may be seen peeping out from the debris and tangle of overgrowth. It is strange how the architect used greek and Roman decorative designs when they differed so greatly from the designs of his day. It requires considerable nerve

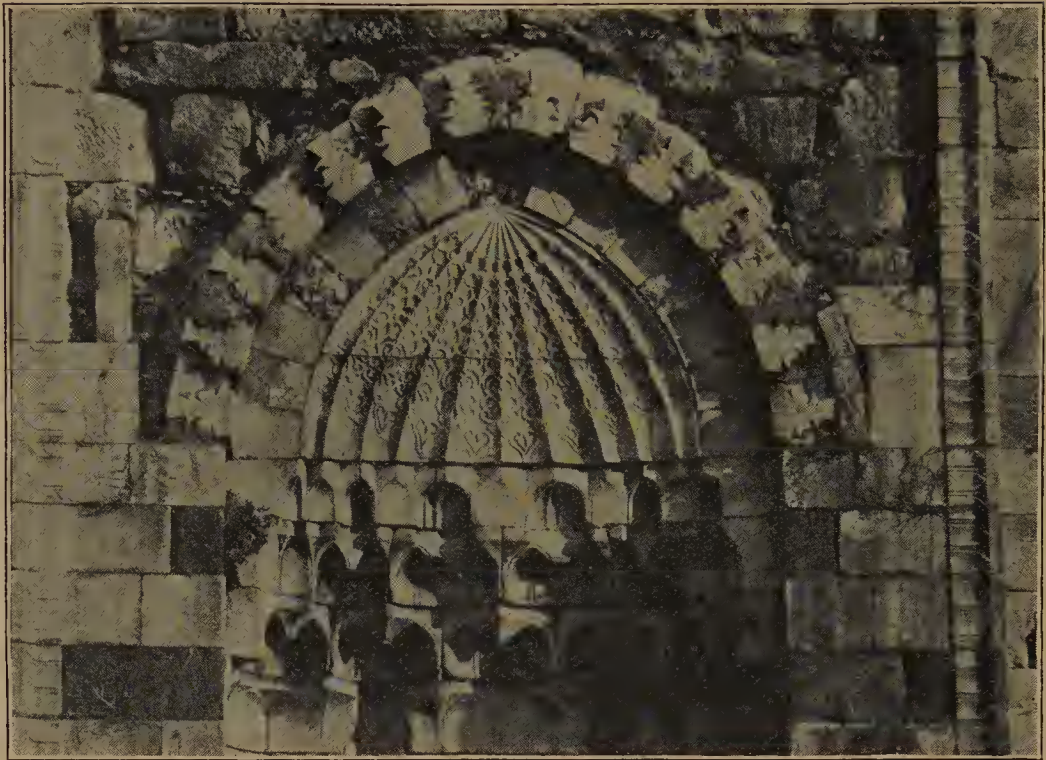
*See illustration [Fig. 4] page 282.



WINDOWS TO THE SOUTHWEST WING
OF THE MOSQUE [FIG. 8]



WINDOWS TO THE CLOISTER COURT
OF THE MOSQUE [FIG. 5]



CANOPY OVER THE ENTRANCE PORTAL OF THE MOSQUE [FIG. 7]

to climb the lofty minaret, as huge portions of the brickwork have fallen from its face, leaving the coiling staircase in places to support itself.

The grand effect of this minaret is now quite ruined, as all above the gallery floor has been swept away. During the spring months the minaret, the cupolas, the gables and every elevated pinnacle is tenanted by storks busily engaged in family cares, there they stand in fine weather or foul taking no notice of the hurricane blowing over and whistling through the deserted arches.

Let us now pass out of the Great Portal and take another look at the southwestern lateral front. The photographs clearly show how successfully a telephoto half-plate camera can be used for recording architectural detail. I placed the camera some 70 ft. away, and really should have been further, but the ground would not permit of it. Our fifth illustration gives one panel of the double storied windows to the Court as seen on the left in our second illustration (the little archway framed by the lower window is opposite on the other side of the court). The sixth illustration gives the rear of the upper window of our fifth illustration. Is not the pattern of the interlacing semi-circles engraved round the arch chastely beautiful?

Our seventh illustration shows the arch and canopy of the Great Portal. We see a curious masonic attempt at deception. The marble fan-like filling to the arch is flat instead of curving away inwards, making a shell shaped hood, but the portal being too shallow for the recognized method the sculptor attempted a perspective like treatment of the flutings and decoration with ill success; yet before passing we

must admire the intricate interlocking of the voussoirs of the outside arch.

Our eighth illustration shows the fenestration of one panel of the two storied windows to the right of the portal of the mosque. Do we not exclaim at the lace-like beauty of the upper window and admire the patience of the sculptor while he was at his monotonous labors! Indeed this window teaches us a lesson in that the time occupied on an uncompleted task would go for nothing while the time taken over a task accomplished is soon forgotten in the pleasure given by the result. Just one more thought before we leave this old and desolate ruin. Is it not a curious fact that the love of small refined detail seldom carries with it grandeur of conception? Look at our first two illustrations. Is it not a factory-like building taken as a whole? Of course allowances should be made for its ruined condition. But mere surface decoration around openings placed unsymmetrically and seemingly haphazard is not conducive to a fine exterior as a whole.

Turning our backs to the Oriental civilization of the Middle Ages we seek our modern Greek inn, and while patiently waiting for the lunch which never comes to time we look down the long dreary road towards the sea used by the Yuruk riding his sagacious little donkey leading his caravan of camels.

A. E. HENDERSON, R. B. A.

London, England.



DISCOVERIES IN NUBIA:—Much of the pottery discovered by M. Garstang at Kostamneh, Nubia, is of the “black-and-red type” and bears an obvious imitation of basket work. There are also other attempts at decoration which have hitherto been considered as characteristic of the I dynasty. Many are inclined to consider this fact as pointing to Nubia as one of the homes of the Egyptian aborigines. Mr. Garstang has not committed himself as yet on this point.

Among the objects of interest exhibited by Mr. Garstang are a kneading trough, or slightly hollowed flat stone, whereon some (possibly) prehistoric woman was accustomed to roll her bread. Behind it is to be seen the wooden model of a woman engaged in this occupation with an exactly similar stone—a model found in a tomb of the XII dynasty; while by its side is a photograph, taken by Mr. Garstang, of a Nubian girl of the present day performing the same act with exactly similar materials. When customs and, in a double sense, fashion in utensils thus persist at intervals of more than 7,000 years, it is plain that no very cogent argument can be drawn from the form or style of things so easily made and imitated as clay pots.



GREAT DOORWAY, HOLYROOD CHAPEL

ANCIENT YORK*

THE amount of interest and energy the author has given to his subject in this volume has made it most readable. Going back, as he does, to the earliest account, he holds one fascinated by his tale of battle, siege, and victory, and by degrees brings them down to the city as we see it today.

Before the conquest by the Romans there was probably a settlement of Brigantes, the position being exceptionally good, as the two rivers—the Ouse and the Foos—were both tidal rivers. Of course there are no traces of this early settlement. Julius Cæsar and Strabo tell us that settlements were in the woods, surrounded by banks and ditches.

The discovery of human bones buried below those of the Roman and English periods establishes the fact beyond doubt. This settlement was probably called Eburach, as that term indicates near the meeting of waters. The present castle mound does not seem a very natural one, and it is much more probable that it was made by the Romans. The Roman conquerors kept very careful records. It was in 55 B. C. that the first Roman fleet approached the southern coast. Cæsar invaded Kent, and then withdrew into Gaul. The next year he advanced still farther, but again withdrew before winter. He wrote the first account given of the Britons, and described them as all “barbarians,” and said that they were divided into many tribes, each having its own chief.

Nearly a century elapsed before another invasion was attempted, and it was not until 43 A. D. that Claudius visited the island. From this time some legions were kept on the island until it was finally abandoned by the Romans.

It was during the campaign of 50 A. D., Ostorius Scapula being commander, that we first hear of the Brigantes who inhabited this district of which Eburacum was the capital. This province extended from Derbyshire to the river Tees. These Brigantes were governed by a queen, Cartismandua, “a woman of infamous memory.” Agricola, about the year 79 A. D., conquered the Brigantes, and is reputed to have fortified a stationary camp at Eburach. It was during Agricola’s command that the Roman dominion was furthest carried. The Emperor Hadrian came to the island in the year 120. Claudius

**York: The Story of its Walls, Bars, and Castles; Being a Complete History and Pictorial Record of the Defences of the City of York, from the Earliest Times to the Present Day.* By T. P. Cooper, author of the *Old Inns and Inn Signs of York*. With original Drawings by the Author, Numerous Illustrations, Plans, Facsimiles and Appendices. London: Elliot Stock. 8vo. Pp. xx, 365.

Ptolemy, the Greek geographer of Alexandria, also mentions it, and this book was supposed to have been written A. D. 138.

About the year A. D. 206 or 207 Septimus Severus arrived at Eburacum, which was then the principal city of the north. From here he marched against the Caledonians, and with great difficulty defeated them. He returned in 210, and died February 4 of that year. Tradition says that he was buried where he died, but other accounts say that his ashes were taken to Rome. The mounds near York known as Severus Hills are said to be the place of his funeral pyre. In 306 Constantius died at York, and his son Constantine inherited his power. According to the Anglo-Saxon Chronicle, the Romans left Britain in the year 418, though Horsley, in his *Britannia Romana*, places the date at 446.

In 1854, while some workmen were digging a drain, a tablet was found at a depth of 28 ft. The inscription is not complete, but the lettering is perfect, and records some work by order of Trajan executed by the Ninth Legion. The supposition is that this tablet was erected near the south gate. The circuit wall surrounding the early fort or city has been very fairly traced out, and it has been found that the 4 corners were straightened by towers. All the references we find suggest the fact that the Roman wall had not been destroyed so late as 1524.

From numerous remains we conclude that the Roman city was much lower than the level of the present city. Numerous portions of the Roman wall have been discovered. Bootham Bar is undoubtedly erected upon the site of a Roman gate, and from the various excavations it may be considered a fact that the city was rectangular in shape, and included about $52\frac{1}{4}$ acres. Much of the wall was built by the Sixth Legion, for the bricks bear that impress.

About 6 ft. below the pavement of Stonegate the Roman paved way extended, and through the middle of this was found a channel of grooved stone, as if for a skid-wheeled trolley or wagon.

All the stone in the wall is magnesian limestone, brought from the Huddleston Quarries, which have been used from very early times. Just how it was brought is a question, although to have brought it by the Roman road connecting Tadcaster (or the Roman Calcaria) with Eburacum was possible.

It was not long after the Romans withdrew that the Jutes, Angles, and Saxons came, whether by invitation from the Britons to help defend them from the Picts and Scots, or on their own initiative, is not known. They were barbarous and destroyed much of the admirable work of the Romans.

The Angli came into Yorkshire about the middle of the VI century, but it is not known how they captured York.

The name of the city was changed many times during the stormy period which followed, but this is evidence that it always held together



CHAPEL ROYAL, HOLYROOD

in a way, and during the 6 centuries between the departure of the Romans and the arrival of the Normans, the old Roman wall offered some defense to it.

We do not find the name York mentioned as the chief town of an English king before the days of Edwin, the founder of Edinburgh. This king was baptized at York, on Easter Day, A. D. 627, by Paulinus.

After a period of battles and losses, in 635 Oswald became king, and rebuilt the minster at York on Foundations Edwin had laid down. In A. D. 780 Alcuin was appointed librarian at York.

In 866 York fell into the hands of the Danes. They devastated wherever they went, and left a garrison behind in York, but returned in 870, and remained a year. York was at this time the seat of the highest learning in England, and doubtless the Bishop would endeavor to defend the place as well as he could.

During the IX century we find that Northumbria was still in the hands of the Danes, who lived principally at York. We find coins that were minted there, proving this fact.

About the dawn of the X century a reaction set in, and the West-Saxon king, Edward the Elder, the son of Alfred, and his sister, Ethelfleda, made out a plan of conquest, which they in great part

carried out, he taking the coast side, and she the west. At their suggestion, there were erected 30 *burhs*.

According to Clark, "A *burh* is a moated mound with a table top and a base court, also moated, either appended to one side of it or within which it stands." Questions have arisen as to whether Clark's ideas as to what constitutes a *burh* are correct. Many sorts of earth-work or palisade have been called a *burh*, and it is from this idea of inclosure by whatever means that we have arrived at the word borough.

In the year 1066 great political changes took place, and York played an important part in many affairs, and it was in that year that it was again beset by foreign foes. Edward the Confessor died January 6. Earl Harold was elected king, but his brother, Tostig, who had been banished in 1065, looked upon the whole transaction with disfavor, and secured the help of Harold Hardrada, of Norway, to scour the whole eastern coast, and they finally entered the Humber. They sailed up as far as Riccall, and disembarked, and marched towards the city. Here they were met by Earls Edwin and Morker, and a fierce battle was fought, which ended in the defeat of the Northumbrians. The Norwegians took possession of the city, but as the news was hurried to Harold, he appeared the day after the capitulation, and another battle followed, in which the Norwegians were worsted, and then the king hastened to the south to meet William of Normandy, whom he met in the famous battle of Hastings, where he lost his life, and England was turned over to the Normans, who soon reinforced the walls of York.

It was during the reign of Richard the First that the most terrible affair, the burning of Clifford's Tower, took place. Owing to race hatred, some 500 Jews were murdered, when the remainder in the city appealed to the sheriff, and took refuge in the tower. For several days and nights they were besieged, when finally a rabbi begged the head of each family to kill the members and then himself, and this was actually done, and the building set on fire. It was a wooden building, and is supposed to have stood near the site of the present tower, from which we learn that it is not only in our times that the Semites have been sufferers.

The York of today, with its well-built walls and gateways, is one of the most delightful of English cities, the charm of its streets being added to by the glamor which history throws over it all.





CRESCENT BEACH, GREEN LAKE. SAND RIDGE AFTER WINTER OF
1905-6 [FIG. 1] *Photo by H. Gates.*

GREEN LAKE AND ITS MOUNDS

AMONG the glacial lakes of Kandiyohi county, Minnesota, the largest and most interesting is Green Lake, having a circumference of $14\frac{1}{2}$ —a length of about 5—and an average width of $4\frac{1}{2}$ miles.

It is a magnificent body of deep, restless water whose normal tint of dark translucent green is the basic color of rich displays of iridescence under the touch of vagrant winds, or, the lash of fierce tempests, or, the cool calm of autumnal sunsets, as from zenith to sky line the day burns out in myriad gradations of gorgeous hues.

In the spring the ice is driven high upon its shores, and forms in places, as on Crescent Beach, great sand ridges, or, encountering in its course an ancient one of boulders, it overwhelms it with jagged and splintered blocks.

In Figure 2 we view from the North East a bit of one of these ice-formed ridges, extending on the East shore a distance of half a mile, and about a mile south of the mounds.

The glaciated surface of the boulders in this extensive ridge yet bear witness to the impact, the grinding and pounding of the ice masses of the olden springtides:—as a few months ago—the waters I hear splashing drowsily beyond this hoary barrier were storming the rock strewn ramparts of its western front.

As we glance along its crest we gain some idea of the great force energizing in its formation—both past and present. It has an average width of from 8 ft. to 15 ft. and height of 8 ft. to 10 ft. Many

trees of various sizes are scattered or grouped along its whole length, with here and there prostrate trunks and rotting stumps, while ever and anon a dead, weather beaten, barkless tree, standing entire, or frayed off many feet above its base, witnesses the height and power of the annually indriven ice.

Passing from this ridge we reach higher ground declining into a low, wooded shore of considerable extent and terminating in a sandy barren tract (really an isthmus) between the lake and a deep morass. Here the ground rises into a morainic prairie, some 40 odd feet above the lake, forming the southern end of the plateau, anciently a peninsula, on whose northern extremity are grouped the mounds. There the



AN ANCIENT ICE RIDGE FROM THE NORTHEAST [FIG. 2]
Photo by H. Gates.

elevation averages some 20 to 25 ft., where it is bounded by an extensive and deeply flooded marsh and the outlet of Green Lake. Speaking of these mounds, Dr. Warren Upham in his able survey of this county in 1879, says:—

“They are on a nearly level prairie, 20 ft. to 25 ft. about the lake, and the same height above a marsh, which lies north of these mounds, and has a width of half a mile, being separated from the lake by an ice-ridge, on which are trees and a road.”* (Vol. II, p. 241, etc. *Geo. & N. H. Survey, Minnesota.*)

* On June 13, 1906, the present writer walked to the mounds from the north shore, and found on reaching this “ice-ridge” and the “road,” that the ridge and the road were submerged by the high water for many feet, and he was obliged to wade to the “peninsula” through some 3 ft. of water.

Dr. Upham enumerates this group of mounds as "31 circular," "6 oblong" and "2 embankments," 3 having a height of $1\frac{1}{2}$ ft., 12 of 2 ft., 4 of $2\frac{1}{2}$ ft., 13 of 3 ft., 1 of $3\frac{1}{2}$ ft., 1 of 4 ft., 1 of 5 ft., and 2 of 6 ft. above the plain—and the two long mounds, noted as embankments, a height respectively of 2 ft. and 1 ft. The shorter of these two "embankments" has a length of 150 ft.—lying S. 30° E.—and the longer that of 200 ft.—trending S. 55° E. The latter lies some 300 ft. S. E. of the former, and is shown in Fig. 4 extending through the background. Successive cultivations of the soil have greatly reduced its original height, and before many years it will, with the mounds near it, be completely obliterated.

The unusual precipitation of the past 3 years has not only raised, by many feet, the lake levels throughout this region, but has outlined



LOOKING NORTH ALONG THE SUMMIT OF THE ICE RIDGE
ON GREEN LAKE [FIG. 3]

Photo by H. Gates

and emphasized many of the ancient lake beds and water courses which in prehistoric times obtained; but now usually exist as marshes and indicated beds of vanished streams. At one time this tongue of land was a treeless peninsula, bounded on the east by a far more expansive and far reaching body of water than the photograph indicates. (Fig. 4.) From Green Lake on the west the water swept around on the north, then eastward, and reaching up to the northeast, terminated in what is now Lake Calhoun.

Standing, as the writer has, in the center of the field shown in Fig. 4, one can by aid of the high water and the flooded condition of



THE EASTERNMOST OF THE 2 SO CALLED "EMBANKMENTS" OR SERPENT MOUNDS S. 55 E. 200 FT. IN LENGTH. LAKE CALHOUN ON FAR HORIZON [FIG. 4]

the country, readily obtain an idea of the ancient topography of this prehistoric burying place when these mounds were in process of erection.

In the illustration can be seen, outlined faintly across the cultivated field, and in front of the trees bordering the ancient watercourse,



PANORAMA OF THE MOUNDS WEST OF THE PRESENT HIGHWAY. THE SO CALLED "EMBANKMENT" IN THE FOREGROUND S. 30 E. THE MOUND EXCAVATED IS THE FURTHEST ONE TO S. W. OF HOUSE, EAST SHORE OF GREEN LAKE. THE WOODS BORDER THE LAKE [FIG. 5]

a long, low mound, some 200 ft. in extent, perfectly straight, and trending S. 55° E. At the N. W. extremity are the faint traces of a low, oval mound a few feet in diameter. This long mound, with its com-



THE NORTHERNMOST OF THE 2 MOUNDS MARKED 6 FT. STATE
GEOL. SURVEY P. 242 [FIG. 6]



MOUND MARKED 5 STATE GEOL. SURVEY [FIG. 7]

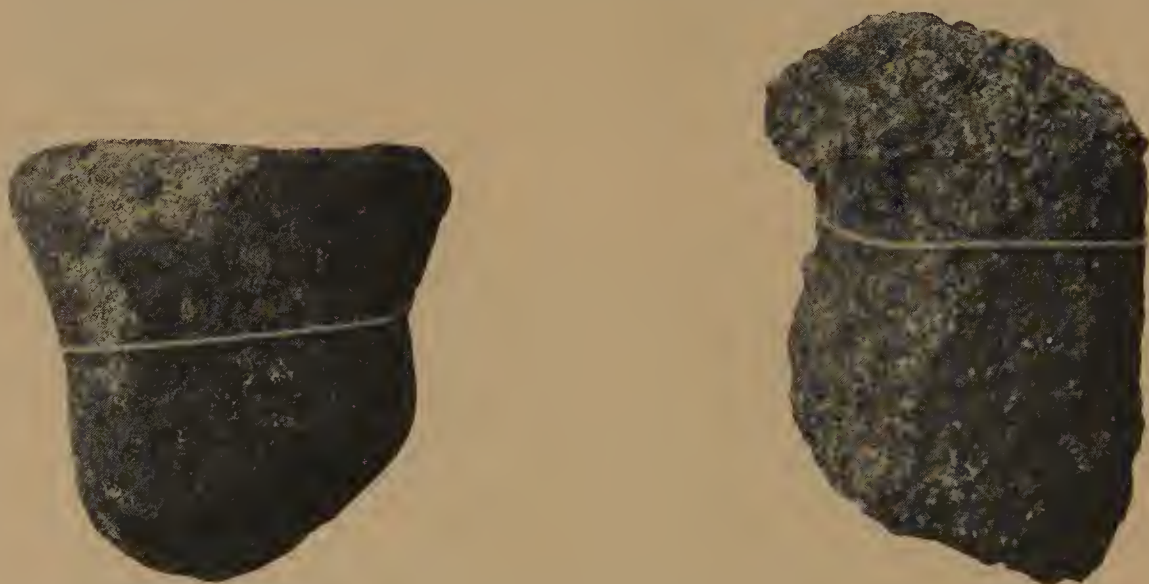
panion, shown in Fig. 5, is called by some an "embankment"; but by others it is regarded as an "idol or serpent mound."

Both lay, at the time of their making near the water, both point to the N. W. as to a common center where the commingling of the waters from at least three sources took place. If any observer of nature will stroll along the marshes contiguous, say on any hot day, he will find

the snake stretched out at full length, basking contentedly in the glowing radiance, its very attitude suggestive of the "embankments"; nor need we fare far for the mound-builder's model. The semi-drowsy, sluggish and quiescent state, characteristic of the snake just preceding the casting of its skin, together with its great activity, alertness and brilliance of hue following the act, were highly typical to the mound-builder of his own future state after the lethargy of the "long sleep" had fallen upon him.

In this connection, then, the snake or serpent mound, representing the serpent stretched out—dormant, without kink or convolution, was a fitting and assuring symbol—around which these ancient people grouped their graves.

The other phase of serpent symbolism, indicative of motion, activity, vigorous life—the reproductive forces of nature—is seen in the



STONE WEAPONS FOUND IN MOUND, MORE OR LESS DISINTEGRATED

Photo by Wold & Simons

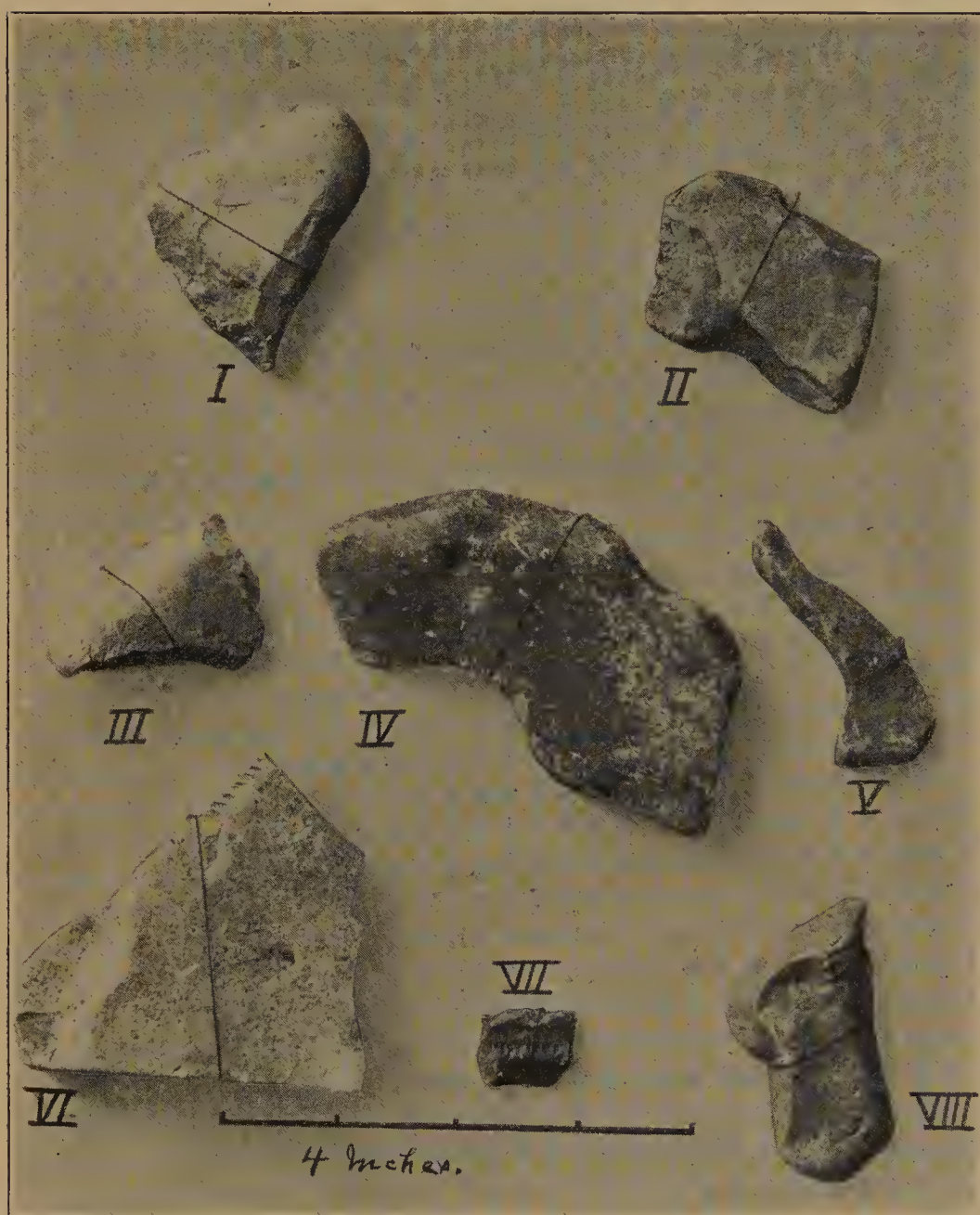
[FIG. 8]

form presented by the serpent mound in Adams county, Ohio, (RECORDS OF THE PAST, Vol. V, April, 1906), that the great Serpent Mound under the shadow of Ben Cruachan in the Hebrides, and that which once existed, on what is now known as Holy Hill, Wisconsin, and where, strange to say, a Roman Catholic miracle-working shrine has replaced the *Ameridian* symbol of virility and healing.

Over a generation ago this tract at Green Lake was settled upon by Mr. William Taggart, who, in excavating for the cellar of his first house, unearthed some fragments of bones and pottery.*

Later, his sons, "partially excavated the northernmost of the two mounds, which are marked on the map" of the State Geological Survey "as 6 ft. in height," "and found within it a hollow chamber, dome shaped, about 3 ft. high, with a flat floor, which was on a level with

*Communicated to me recently by his grandson, Mr. E. C. Huffman, Sioux City, Iowa.



FRAGMENTS OF POTTERY, ETC., FROM MOUND [FIG. 9]
Photo by Wold & Simons

the base of the mound.” “The mound marked 5 ft. has also been dug into, but it appears that no bones or implements were found in either.” (Dr. Warren Upham in *State Geo. & N. H. Survey*, Vol. II, p. 242, Minn.) See Fig. 7.

Since the Taggart excavations there have been several attempts to get at the true inwardness of these mounds, but so far as the present writer can learn, there has been preserved no record, either in the way of writing or photography, of results. There are evidences in plenty that other mounds than those mentioned by Dr. Upham have been dug into, or otherwise investigated.

When, through the courtesy of Mr. Frank H. Harris, owner of the property, we were given permission to excavate and photograph as we might desire—a mound at the extreme southwest of the group, some 3 ft. 7 in. in height and 16 ft. in diameter was chosen. It is in the thick timber, and 40 ft. from the lake. Growing from it were several large trees, while the rotting stumps of others indicated that even larger ones had at some time in the past flung high their branches. Much brush wood covered the spot.

Assisted by Mr. Elmar Broberg of New London, we dug a trench 3 ft. wide, beginning at the north edge of the mound, and west of a line bisecting it, due north and south. This trench was pushed forward, after clearing away the sod and mould of the present plain, on the level of the virgin soil—following closely the clearly defined line of demarcation between the latter and the peculiar black earth of the artificial mound. This earth is very black, having a pungent smoky odor, and is mixed, here and there, with fragments of pottery and shells, etc. The virgin soil on which it has been heaped is coarse sand and pebbles.

The trench was carried south, at the width noted above, for 6 ft., then expanded, fan shape as the center of the mound was approached. On reaching the center, and in the western expansion of the fan trench, at a depth of 2 ft. 3 in., a granite battle axe was uncovered, at first sight seemingly in perfect preservation. The moment it was moved, however, it proved to be much disintegrated, and fell away so rapidly that all we succeeded in saving is shown in Fig. 8, No. II. No. I, same figure, is a weapon or implement of fine grained red granite, found at a depth of 2 ft. 8 in. east of the center—eastern expansion of fan trench. It also exhibits signs of the freezings and thawings of this strenuous climate. Mingled quite liberally with the black mould at this depth were many potsherds. In Fig. 9 may be found some of these typical sherds—as Nos. I, II, III, V, VI, and VIII. The material is a bluish clay fading into a dull gray from long exposure to the earth. All are marked, more or less, while in a plastic state, by a series of what seem to be thumb or finger nail marks:—noticeable in III, VI, VIII, while not so numerous in I, II and V. On several pieces the print of finger or thumb ball is clearly discerned, as in II for instance. While carefully examining the shovels of earth, I came upon No. VII, and was struck by its resemblance, as far as design, to the fragments of sherd noted by Mr. Frank Abial Flower on page 103, Vol. V, Part IV RECORDS OF THE PAST. It is of hard, red-brown material, with here and there a sparkle as of mica, and exhibiting a superior design and workmanship over any sherd as yet found by me. Careful search failed to bring to light another specimen of this kind.

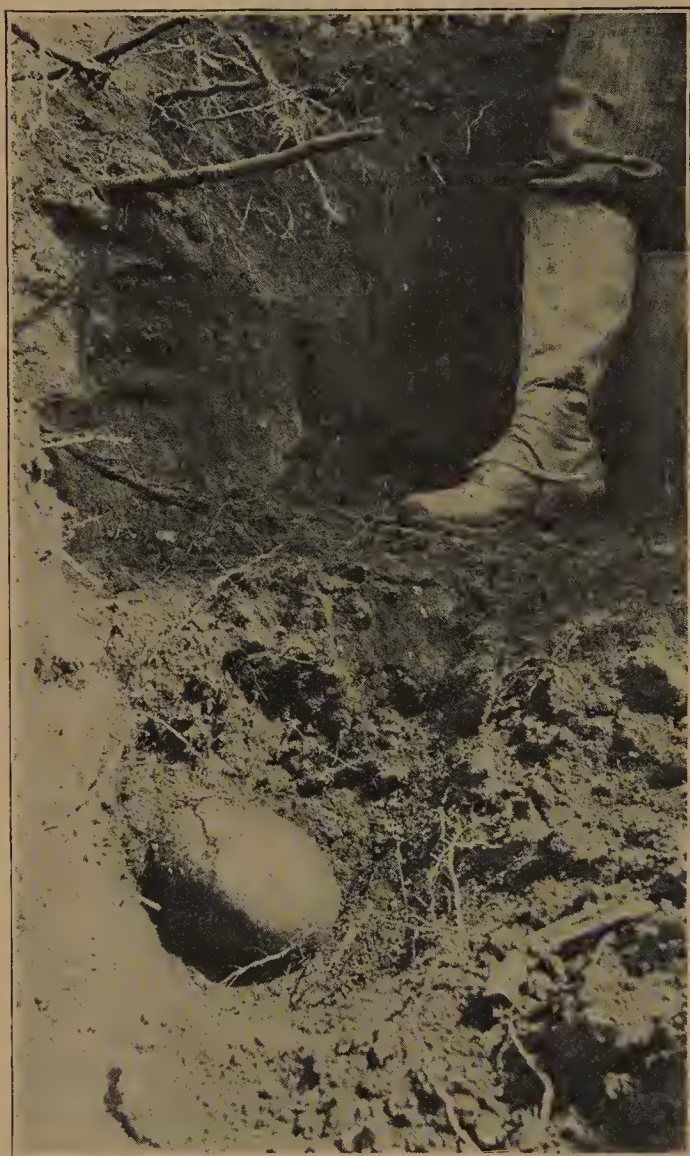
At a depth of 3 ft. 2 in., in the center of the mound, we uncovered the remains of a skull, and traces of a skeleton. Wherever the fine superimposed mould had completely encompassed the bones their



SKULL FROM THE MOUND [FIG. II]
Photo by Wold & Simons



REMAINS OF SKULL AND HUMERUS FROM MOUND. HOLE
 IN SKULL MADE BY PICK [FIG. IO]
Photo by Wold & Simons



PORTION OF FAN TRENCH, LOOKING SOUTH,
SHOWING SKULL IN SITU JUST AFTER
CLEARING AWAY ROOTS [FIG 12]

Photo by Raymond D. Spicer

decomposition had been total. Where, on the other hand, the sand and gravel—the virgin soil—had predominated, the bones were preserved by a species of petrification. To this fact we owe the preservation of such fragments as a portion of the right humerus the right scapula, and one of the metacarpal bones. It also accounts for the excellent preservation of the greater part of the skull. This latter (Figs. 10 and 11), was solidly packed with $3\frac{1}{2}$ pints of coarse sand and gravel, throughout which ramified a perfect net work of filaments from the roots of large trees, as well as enveloping the exterior of the skull. Figure 12 gives us the trench just after the skull was uncovered and the filaments removed for the camera. The body, as indicated by the position of the skull, and fragments of the skeleton, had been laid on its left side facing the east, and exactly due north and south. The compass when applied indicated not the least variation.

From the top of the mound at center to the top of the skull (Fig. 12) was 3 ft. 2 in.; to the gravel in which it rested 3 ft. $7\frac{1}{2}$ in., and accords with our estimate, that the original height of the mound must have been somewhere from 4 to 5 ft. The skull, which is highly phenozygous, has been measured, and the measurements kindly furnished me by Dr. Leslie S. Keyes of Willmar, Minn., as follows:

“Circumference, 28 cm.-dome. Length, 17.5 cm. Width, 10 cm. at level zygoma. Width, 13 cm. parietal eminences. Narrowest, 10.25 cm. distance between temporal bones. This skull presents a length of brain case 17.5 cm. in comparison with the average Euro-

pean which is 17 cm. showing a marked variance in this proportion. The width, however, is much narrower than the average of the present day, being 10 cm. instead of 12.5. Our proportion would, therefore, present the following reduced index: 1000:17.5 as measured to 12.50:17 using the craniologist's proportion 100 x width—length."

Midway between the skull and the fragments of the humerus we found the singular piece numbered IV in Fig. 9. It is of blue clay, showing plainly the usual thumb or finger ball marks, and on the reverse has a number of finger nail indentations as noted in No. VI. The original is overlaid on the obverse by a bluish black enamel-like coating, worn away in places. Careful examination with a magnifying glass will repay the archæologist, and may reveal sufficient, taken in connection with other indications, to warrant the belief that we here possess a phase of that symbol of Serpent or Phalic worship, which apparently entered so largely into the customs of these people.

In our second paper, we trust to give an illustrated account of further researches on this and the N. W. shore of Green Lake.

HORATIO GATES.

The Rectory, Willmar, Minn.



PALESTINE EXPLORATION FUND

THE most interesting point to many readers in Macalister's *Bible Side-Lights from the Mound of Geser* is his mention of the wedge or tongue of gold found there. When it was first discovered all possible secrecy was used lest its fame should stimulate the plundering of city mounds, and it was taken away to Constantinople. There was therefore no mention made of it in the *Quarterly*, but the mention of it in this book shows that it will be fully described and figured in the forthcoming volume on Gezer. I saw a plaster cast of the wedge at the London office of the fund in 1903, which shows that Mr. Macalister has kept silence 3 years.

This discovery is an evidence of the use of exploration to the interpreter of Scripture. The English text of Joshua vii said "wedge," the margin had from the Hebrew "tongue," the revisers said "wedge" alone but no one knew what was meant. It might be an implement, it might be an ornament, it might be a spoon (in Latin *lingula*), and a dagger of a certain form was called a "tongue." All these suggestions were made, but they were mere conjectures, and of course all will cease to be heard from this time. It was an ingot, a wedge-like mass of gold held as treasure. Of the same stratum as the other relics of Joshua's day, it precisely explains what Achan took from Jericho. A second one was found, but has not been described as yet.

THEODORE F. WRIGHT.



GRANITE SHAFT AND ANTIQUE CAPITAL IN
THE MOSQUE [FIG. 4 OF FIRST ARTICLE]

EDITORIAL NOTES

NEOLITHIC PERIOD IN CRETE:—Prof. Arthur Evans is of the opinion that the thickness of the neolithic layers in Crete requires 14,000 years for the beginning of the neolithic period in the Aegean Sea.

POST SYSTEM IN PTOLEMAIC EGYPT:—A document has been found at Oxyrhynchus which is evidently the record of the local postman in which he states that he has delivered among other things "One roll of papyrus for Antiochus the Cretan, one roll for the King, and two letters for Apollonius the diœcetes."

UTOPOS MYTH AS TO THE ORIGIN OF THE WHITE AND BLACK RACES:—In the *Belgium Royal Geographical Society Journal*, M. Lindeman gives the myth as to the origin of the white and black races, which he obtained from the Utopos, one of the Congolese tribes. According to their belief Libanza, their god, sent his son Tserenga to the earth to see what different races of mankind were doing. Among the Europeans he was well received, so he gave them white skin and much knowledge, but among the Africans he was badly received so he left them black and stupid.

SEMI-DOMESTICATION OF ANIMALS IN PLEISTOCENE TIMES:—In a recent issue of *L'Anthropologie* the late M. Ed. Piette discusses the semi-domestication of animals in Pleistocene times and the methods of leading them by halters made of skin or cord. The article is illustrated by figures of horse-heads bearing this kind of harness from St. Michel d' Arudy, Brassempouy, the Cavern of the Espelugues at Lourdes, Mas d' Azil and elsewhere.

ANTHROPOLOGY SOUTHEAST OF TIMBUKTU:—A communication on the Central Nigerian plateau recently made to the Society of Anthropology of Paris by Lieut. Desplagnes, who had been committed by the Academy of Inscriptions to investigate the prehistoric remains in that part of Northwest Africa, was characterized by MM. Papillault and Zaborowski as important and novel, and obtained for the author at the Society's following meeting the honor of corresponding membership. The district described is that lying to the southeast of Timbuktu, and bounded on the west by the Niger, a country which appears to have been populous and civilized in very ancient times. This is testified by megalithic monuments, tumuli, and inscriptions. The author detects in the Bozo fishermen the primitive type of Nigerian. The dwellings are of brick or of stone, and

generally of more than one story, the bed rooms being on the first floor and approached by a ladder. Those of the chief and principal men are decorated with colonades and chevron work that recall the architecture of Zimbabwe. In each village group the heads of families elect a chief, styled "hogon," and the hogons in general assembly elect a supreme chief, or "har-hogon," whose authority was formerly absolute in political and judicial matters, but is now no more than a vague religious power. The people generally believe in an omnipotent divinity, but consider that he does not interest himself much in the affairs of mankind, which are left to inferior and often malicious divinities, which it is the business of a sorcerer entitled the "laggam" to propitiate. On the occasion of religious feasts, animal sacrifices are offered by the hogon on a three-pointed altar to a divine triad, which includes a male principle, and also a female. Ritual dances in masks are executed by the young men. Death is considered to be the work of the evil deities, and the funeral ceremonies are based upon this opinion. Commerce and the sense of security are gradually working a change in these people, the great markets or fairs being sometimes attended by 6,000 or 7,000 persons.

In the region of Tagant, further to the west in Sahara, M. Robert Arnaud has observed some curious alignments of megaliths, and obtained photographs of rock pictures representing warriors on foot and horse soldiers, an oval decorated with a cross, and an ostrich.

AN HIERATIC PAPYRUS:—A papyrus from Egypt of the XXI dynasty has been translated by Dr. E. Revillout, which is of special interest, as it shows an "*Actio sacramenti*" in criminal cases analogous to that which was in use in the Roman Civil Law. This is a solemn oath accompanied by the deposit of a sum of money which was forfeited if the case was lost. The following translation is taken from the *Society of Biblical Archaeology* for June 13, 1906.

"Year 2, 4th month of *smu*, day 23rd. On this day was made the examination of the gold and silver stolen from the sanctuary of Ra-user-ma-meri-Amen, money concerning which the divine Father Amenmes, of the district of this sanctuary, has made a report to the Pharaoh. The affair was placed in the hands of the prefect of the town *Dja* Ra-neb-nexter, of the steward of the Treasury of the Pharaoh, steward of the granaries the Royal officer Ra-men-ma-nexter, and of the steward of the palace the Royal officer Inua, to make their examination in the Royal dwelling of the "millions of years" of this sanctuary. They made their report of 86 silver *χαλκία* being ascertained to be missing, which have been stolen, and with regard to which the divine Father of the Fraternity of the sanctuary made his report (or his claim) to the Pharaoh. He (the *Dja*) said: 'The man who caused them to be stolen has not been seen.' He (the divine Father) said: 'It is the steward of the Treasury, Sutexmes, who had the place of steward of the lands, who has taken them. He has stolen 26 *χαλκία*,

the steward of the Royal palace of the sanctuary. He got off (took away) in silver I *outen* $\frac{1}{2}$ $\frac{1}{4}$. He stole them with the divine Father Ima, the priests and chief guardians of the sanctuary, Roanina, Emtexuu, Rames. They took (his accomplices) 60 *χαλκία*. They got off (took away) 3 *outen* $\frac{1}{4}$ of silver. Total 5 *outen* there remains in silver 36 *outen*. They entrusted that to the guardian Uraa. They got the *χαλκία* as profit.

"He (the divine Father) was made to entreat (invoke) the name of the king. He was made to deposit the tenth part of an *outen* (one kati) in his dwelling. Then the Pharaoh made them apprehend the 5 criminals together, forthwith, in the sanctuary. He went to the sanctu-



CUT FOR THE LOCK AROUND THE CASCADES OF THE COLUMBIA RIVER

ary, the divine Father (the accuser) with the man (the accused) to say what had been stolen."

The accuser referred to was aroused by this first result; for the rest of the papyrus, relates that later he made other analogous revelations.

SUBMERGED TREES IN THE COLUMBIA:—Since this article appeared in our August issue we have received the photograph reproduced above which is preferable to the one appearing on Page 246. This view is of a cut for the lock showing soft conglomerate to the left on the side next the river and sedimentary deposits adjoining.

WORLD QUARTER SHRINES:—Of the shrines erected by the Hopi, perhaps the most interesting are the so-called "Quarter

Shrines" which are thus described by Dr. Fewkes in the *American Anthropologist*:—

In certain of the great Hopi festivals, as the Snake dance and the Flute ceremony, but more especially in the former, it is customary for the priests to deposit prayer sticks for rain in temporary shrines situated in the four cardinal directions [determined by solstitial sunrise and sunset, not by polar observations] from the pueblo. These sticks are made for 7 consecutive days, their length each day being less than on the preceding day. The shrines in which the offerings are placed are situated at distances also diminishing day by day from the maximum—about 5 miles. On the last day prayer sticks no longer than the first joint of the finger are placed on the four sides of the entrance to the room in which the offerings are manufactured. These temporary world quarter shrines and the offerings placed in them are located at constantly diminishing intervals in order to toll the Rain gods from their distant homes to the pueblo.

Snake Shrines.—In the now voluminous literature of the Hopi Snake dance, little or nothing has been recorded regarding the fate of the long black prayer sticks made by the Snake priests and carried by them in the dance. At the close of the dance these objects are deposited in 4 shrines situated at the base of the mesa, one in each of the four world quarters, and hence called the North, West, South and East snake shrines. It may be mentioned also that in the disposition made of the snakes after the dance a serpent is always left in each of these shrines.

The Snake shrine of the North is situated near a large boulder, not far from a house owned by Kannu. At the time of my visit there were in this shrine several of the black prayer sticks of the priests. The Snake shrine of the West is a cleft in the pinnacle of rock at the extreme south end of the East mesa, near the boulder on which is cut the pictograph of the winged being Kwataka, elsewhere described. The Snake shrine of the East is situated not far from the Buffalo shrine, to the right of the road as one approaches the spring called Ispa, Coyote Water. It is a simple cleft in the rock which bears one or two pictographs of serpents. The Snake shrine of the South is situated a little to the right of the steep trail to Walpi, just below the sheep corral on the terrace. Nearby are pictographs of snakes, and when visited the shrine was found to contain several snake prayer sticks.



THE HYKSOS

One of the principal problems of Egyptian history has been that of the Shepherd Kings of Hyksos. In order to try to solve some part of it the British School of Archæology last season undertook work at Tell el Yehudiyeh, 20 miles north of Cairo, where large numbers of Hyksos scarabs are continually found. The results of this research may be noted under the following heads:—(1) The camp; (2) the culture shown by it; (3) the graves and contents; (4) the history of the period.

(1.) The camp is a great earthwork over a quarter of a mile square, with an embankment 100 to 200 ft. thick, over 40 ft. high, and with an external slope 60 to 70 ft. long. The outer face is of white stucco on a mud-earth backing; mud bricks are freely used in the bank, but not regularly; the bulk of the bank is of sand, with much decomposed basalt from the desert; the inner face was vertical.

There was no entrance through the bank, but a sloping roadway, 225 ft. long, led up to the top of the bank. This was at first merely a narrow road with revetment side walls which joined to the great stucco slope. Within a year or two (while the stucco was perfectly fresh) a flanking wall was thrown out on each side. This held up a platform of earth along the sides of the road, with a massive revetment on the outer sides and a thinner wall on the inner sides next to the road. After perhaps 2 or 3 generations, when the stucco slope had rotted and had partly fallen away, an entire change was made by building a stone wall on the foot of the slope all round the camp and banking it up level behind, as at the earlier flanking wall. This stone wall was built of large blocks of the finest white limestone from the Mokattam hills, 25 miles distant; it was 6 ft. thick, probably 45 ft. high, and over a mile long, a total of about 80,000 tons of stone.

(2.) The method of construction is entirely un-Egyptian, as vertical brick walls and trap gateways were the constant methods of defence of the Egyptians. The absence of any gateway points to the lack of brick or timber among these foreigners. The long slopes show that the bow was the arm employed, and the flanking wall added along the great stucco slope could only be of use as a vantage ground for archers to command the long roadway. We gather then that these people were in the state of culture of later nomads of Asia; the bow was their great weapon, as among the Semites, Parthians, or Persians; they came from an open country without timber, and were too nomadic to utilize bricks in their system of defence. They soon took up brickwork to aid their archery, but the change of the method of defence to stone-walling was a slow matter. From their graves we also see that they had no domestic pottery, merely taking over the Egyptian forms which they found in use. This shows that they used vessels of skin and wood, like other nomads.

The age of this camp is certainly before the XVIII dynasty, as it was largely altered in the XX dynasty, and the XIX and XVIII were purely Egyptian dynasties, when no such foreign work would have been made. The abundance of scarabs of the Hyksos age, and the rarity of any earlier remains here, conclusively show that the foreign constructors were the Hyksos.

(3.) The graves were found inside the camp, and in a sandy rise to the east of it. The best preserved were brick chambers with barrel roofs. The body was contracted, but the direction was not constant. The full complement of pottery was 4 pans, 4 tubular jars and 4 ring stands, all of Egyptian style. Besides these there were imported flasks from Syria of graceful forms made of black pottery with patterns pricked by a comb. Such are well known in Syria and the east of Cyprus, but their center of origin has not been discovered. Scarabs of Egyptian make are also found in the graves.

On comparing the grave contents it is seen that they can be put in a series of degradation of both scarabs and pottery, and the best

scarabs agree with those of the pre-Hyksos age, while the worst pottery joins on to the black pottery of the post-Hyksos age. This series therefore warrants our adopting the view of a continuous degradation of work during this period. Such is to be expected from the known character of the invaders and from the analogy of other foreign invasions.

(4.) We now may connect these results with the history from other sources. Manetho states that the Hyksos "with ease subdued Egypt by force, yet without our 'hazarding a battle with them;'" this is explained by their being skilled archers and so crushing the Egyptians as later the Parthians crushed the Romans under Crassus. He also stated that, "at length they made one of themselves a king," who made the city of Avaris "very strong by the walls he built about it . . . a wall round all 'this place which a large and strong wall.'" So here we see that after the camp had been used for sometime the immense stone wall (6 ft. thick and 45 ft. high) was built around it. And this required skilled masonry and transport, which could only be obtained after there was a central kingship to control the Egyptians. The physical facts exactly agree with Manetho's account. It seems almost certain that this place was the great camp of Avaris.

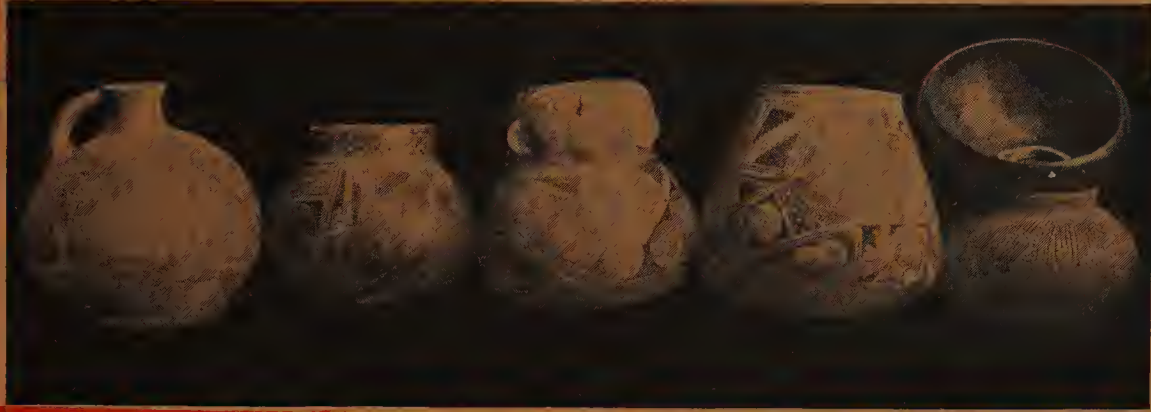
Broadly, we can identify 5 of the "6 Phoenician shepherd kings" of dynasty XV. And there are 22 of the "32 Hellenic shepherd kings" of dynasty XVI. This title, Hellenic, has generally been rejected by editors, but it seems justified by the facts. "Hellenic" would be the translation of the Egyptian *Ha-nebu*, "lords of the north," a general name for Greeks, and especially applied to Cypriotes. The original statement would imply command of Cyprus and of the sea communication. Now, 6 of these later kings put the hieroglyph of "sea" after their names: they were "sea-kings," and if rulers of Cyprus they would be strictly kings of the *Ha-nebu*, and hence translated as Hellenic. The presence of a jar-lid of the Hyksos King, Khyan, in Crete shows how they were in touch with sea communication.

There is no evidence about the race from the bodies found here, as not a single skull could be obtained in passable condition. But the regular title of the early Hyksos rulers, "prince of the deserts," is applied a few centuries before that, at Benihasan, to a typically Semitic ruler of the Bedawy variety; and Prof. Sayce has extended the conclusion, which I pointed out in *The Student's History of Egypt*, that the names of the Hyksos are Semitic; he further fixes them to the Khammurabi age rather before 2,000 B. C.

The evidence that they were ignorant of timbering agrees to their having come from the open country between Syria and Babylonia. The conclusion, then, seems to be that an active race of archers, living by the chase in the back of Syria, perhaps in the Hauran and Palmyra region, fought their way into Egypt, much as the Arabs did in the later invasion after Muhammed.

W. M. FLINDERS PETRIE.

[*Man*, London. August 1906.]



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OCTOBER, 1906

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CLIFF-VILLAGE OF PUYE



TENT-ROCK CLIFF-DWELLINGS NEAR OTOWI CANYON

RECORDS ^{OF} THE PAST

VOL. V



PART X

OCTOBER, 1906



PAJARITO RUINS—THEIR ACCESSIBILITY

SIX months of continual riding, as Forest Ranger in the Jemez Forest Reserve, has enabled me to see only a portion of the vast number of archæological ruins in the Pajarito Region. Every new canyon explored, every new mesa opened by the extension of the system of Forest Service Trails, and each out of the way place chanced upon shows its treasures of cavate dwelling, communal house, watch tower or some relic of the cliff dwelling period.

Puyé, Tsankawi, Otowi, Navakwi, Tchirege (or more commonly called Pajarito), and the Frijoles have been brought to the attention of the public more than other regions, but to me there are sections far more interesting than these. Along the same general lines, of course, and possibly smaller in individual extent, there are groups of ruins within an easy day's trip that have apparently rarely if ever been visited by Americans. Here and there some Indian in hope of gain may possibly have done some rude scratching, but in the main these ruins are untouched. On the other hand the better known ruins show the signs of a good deal of modern research, or in other cases mere vandalism.

Some of these sections show an amazing number of ruins of all types in a remarkably small area.

About two miles South-west of Puyé are cliffs containing numerous cavate dwellings. These dwellings do not seem to be as regular in size as in the average cliff, but vary from the smallest to the largest sizes I have seen. In one of these dwellings I took refuge during

a stormy night with my saddle and pack horses, and found that it afforded ample room. It had been fenced in front, in years gone by, and used by sheep herders as a stable for their pack animals. This house is of course of unusual size, the average being either circular or in the shape of a rectangle, generally with a dome roof and 4 ft. to 5 ft. across, when rectangular, and only slightly longer in the greatest dimension.

The crests of the cliffs in question are in the form of a narrow mesa. This mesa is broken in 3 places, practically forming 4 small mesas. Two of these sub-mesas contain communal houses several hundred rooms in extent each. They are in unusually good condition and the rough hewn rectangular stones form heaps some 15 ft. above the surrounding ground. The shapes of the rooms and of the entire structure can easily be seen. They are even distinct enough to show without excavating that the structures were several stories in height, the lower story containing a much larger number of rooms than the one above it.

To the north of these houses on the first cliff, and easily accessible on horseback or on foot, are two additional large communal houses, while on the slight ridge to the south, to which even any class of vehicles can be driven, are two more houses. This gives a total of 6 large communal houses, uncounted smaller ones and watch towers, and hundreds of cavate dwellings within a very easy day's trip.

Another interesting feature of these dwellings is that they all seem in about the same state of repair, and not as at Otowi, and some of the other points showing a disparity of ages. This apparently indicates that a large part of these ruins, if not all, were inhabited at the same time. If so it is hard to picture even what a busy hive of activity this section must have been.

It is especially fortunate that this group is situated as near Espanola as it is for those who desire to make a quick trip to the ancient abodes. The Puye ruins, previously most visited, are on the Indian Reservation, and it is necessary to obtain permits to visit them, often necessitating a delay. All ruins in the Forest Reserve can be visited without permit, although excavating or any form of vandalism is strictly forbidden.

Unusual interest has been taken this year by the citizens of Santa Fe and Espanola in this region. Recognizing the value from a tourist's standpoint, the business men have started a movement to advertise this great section as well as to put the roads and trails in better condition. In addition to this the Santa Fe Archæological Society has taken on new life, and has added many new names to the membership roll. Its membership embraces now practically all of the prominent people of the city, and a number are very much interested in the work.

Scores of parties have been formed to visit the cliffs, and many tourists have also availed themselves of the opportunity offered to



TYPICAL ENTRANCES, SHOWING PICTOGRAPHS

see the region. The number of people who have seen and will see the cliffs before the season is over far exceeds those of any previous year.

The coöperation of the Forest Service has been asked, and it is probable that a system of Forest Reserve trails will be made bearing in mind the sightseer and archæologist. The ranger's cabins will also probably be built this winter, and made large enough for the joint use of ranger and tourist.

At present a large portion of the ruins, both in the Reserve and in the Vigil Grant, north of the Frijoles Canyon is easily accessible by road or trail. This embodies the main portion of the country occupied by the Tewa tribes in this section.

Rito de los Frijoles (Little river of the beans) and the Keres region south are only reached with difficulty. This region contains the Stone Lions of Cochiti, the Painted Cave and other points of interest. It is to this region that efforts are to be directed to make it more accessible.

The main entrance up to the present time has been down White Rock Canyon, along the Rio Grande to the mouth of the Frijoles. Then over the steep Navajo War Trail across the high Mesa and then down again into the Frijoles Canyon. This trail leads over lava beds and is dangerous and difficult for both the tourist and his animals.

A committee from the Santa Fe Society went over this trail with Professor Hewett and decided to put it in better repair for next season.

I have recently been looking over the country above, and have decided that a much easier trail is available across the tops of the Mesas. It will be no longer, better time can be made on it, it is not dangerous, and the traveler will pass several other ruins of interest. This will be reported to the Society in the near future.

Recognizing the fact that if this region is ever properly advertised to tourists, or known as it should be by archæologists, thousands



A SELECT DWELLING WITH ROOMS CONNECTED

will visit it annually, there are numerous people who have made themselves familiar with parts of the region, and are ready to act as guides.

One can now secure conveyance at Santa Fe and drive to the ruins, or take the train to Espanola and go in from there, or still, if preferable, arrange with the Indian guides for horse or burro outfits. Espanola will enable one to go to the ruins and return in the same day, but few who have any interest in these wonders will be satisfied with such a short stay. A night or so spent around the cheery camp fire, where tales of the ancient race are told, will add much to the pleasure of the trip.

It is a matter of congratulation that the Forest Service is protecting these rich stores of archæology, and the tourist who makes a Western trip without a sight of this interesting region has in my opinion missed one of the best attractions in the West.

HUGH H. HARRIS.

U. S. Forest Service, Santa Fe, N. Mex.



LIGHT FROM GEOLOGY UPON THE CROSSING OF THE RED SEA BY THE CHILDREN OF ISRAEL

HAVING, during the last few years, been twice over the ground where the children of Israel are supposed to have crossed the Red Sea, and having gathered many facts, both new and old, bearing upon recent changes of land level around the eastern shore of the Mediterranean, I am impressed anew with the extent to which geological investigations both explain and confirm the account of that event given in the book of Exodus. The story as there told is remarkable in every respect, and not the least in the way it puts forward the secondary causes through which the way was opened for the deliverance of the people. In a literature written for religious purposes in which it was both natural and proper to throw into the foreground the direct agency of God, it is surprising that so much emphasis is laid upon the means employed by the Creator. It was indeed the Lord which "caused the sea to go back." But he did it "by a strong east wind," which blew all night, and "made the sea dry land." And again, in the song which recounts the event, it was by the "blast of his nostrils" that the waters were piled up. And when the waters came back to overwhelm the Egyptians it was God who "did blow with his wind that the sea should cover them."

Such reference to the secondary cause by which the event was brought about invites us to an examination of the physical conditions in which such a cause would produce the given result. In the plainest manner, therefore, it opens itself up to scientific inquiry.

The Gulf of Suez ends in a narrow point of shallow water extending a few miles north of the city. Where this inlet joins the main gulf, it is partially obstructed by a narrow bar, which is almost out of the water at certain stages of what may be called the tide, though it is not a real tide which affects the depth of the water, but, as is now well known, the wind. It was the surmise of Dr. Edward Robinson, who has been followed by many others, that the

place of the crossing was at Suez, and that this bar was the bridge by which it was effected at low water. But the bar is so narrow that it would be more of a miracle to get the host of Israel across in the time allotted than it would be to disperse the waters which submerge it.

More careful study of the situation, and the increasing light shed upon it by geological investigations, have tended to shift the scene a few miles farther northward, where conditions are found which comport equally well with the position into which the Israelites were brought by their three-days' march, and at the same time



reveal conditions perfectly fitted to account for the whole description.

The shallow inlet projecting northward from Suez really occupies the lower part of a narrow depression, or we may call it channel (several miles of which are now dry) extending through to the Bitter Lakes, and thence on up to Lake Timsah, on which is the present city of Ismailia which probably occupies the site of the Etham of biblical times. The Suez Canal has taken advantage of this prolonged depression, and been able, by a shallow open cut, to connect the Gulf of Suez with the Bitter Lakes, and, following them up to Ismailia, has cut through the narrow ridge of land forming the watershed between the Gulf of Suez and the Mediterranean Sea. This ridge is



JEBEL ATTICA AND THE PLAIN IN FRONT

now 70 or 80 ft. above the sea-level, and has been the passageway between Africa and Asia which caravans and armies have used for thousands of years.

But the narrow depression north of Suez is only 15 or 20 ft. above the present sea-level. This fact brings us into the sweep of a geological theory which is of the greatest significance and highest probability. A subsidence of the land in this vicinity to the extent of 25 ft. would cause the water of the Gulf of Suez to cover the narrow depression extending through to the Bitter Lakes and beyond to the ancient Etham. That there was such a subsidence in recent geological times is evident from both direct and indirect evidence. The whole region around the eastern end of the Mediterranean Sea has been gradually rising during the present geological epoch. At Lydikia on the Syrian Coast, and at Gizeh, near the great pyramids in Egypt, there are abundant deposits containing sea-shells of existing species, from 150 to 300 ft. above sea-level. This is indubitable evidence that the land has been slowly rising. Moreover, the lower part of this depression is covered with recent deposits of Nile mud, holding modern Red Sea shells, showing that, at no very distant date, there was an overflow of the Nile through an eastern branch into this slightly depressed level. The line of this branch of the Nile overflow was subsequently used for a canal, and indeed is now so used, as well as for the railroad.

It is now more than 3,000 years since the date of the Exodus; so that the results required for the explanation of our problem would be produced by a rate of change in level with which geologists are perfectly familiar. Indeed, the best-informed members of our United States Geological Survey maintain that the changes of level about the Great Lakes of North America are such that in 3,000 years a part of the water which is now pouring over Niagara will be

diverted, by a natural flow, into the Mississippi Valley. To the geologist, therefore, the supposition which we are making is of the most commonplace and reasonable order. It is such a supposition as geologists are constantly and boldly making for the solution of the most insignificant problems which are presented to them. How much more is it legitimate to use it in explanation of historical statements so strongly credited as these in the book of Exodus are!

Now, a depression of 20 or 25 ft., existing, 3,000 years ago, over the eastern border of the Mediterranean Sea, would cause the water of the Red Sea to extend northward through the narrow valley which, from the point of view of physical geography, is a continuation of the Gulf of Suez, so that there would be a continuous line of unfordable water as far north as Etham. But for a distance of 10 or 12 miles between Suez and the Bitter Lakes the average depth of the water would be about 5 ft., a depth which could be easily reduced to nothing by the strong east wind spoken of in the biblical account.

The facts about the effect of wind upon water levels have always been more or less known, but recent observations place them now in a clearer light than they have ever been seen before. Among the most conclusive and satisfactory sets of observations upon this point are those which have been made by the officers of the United States Coast Survey upon the effect of wind upon water levels in Lake Erie. This lake is about 250 miles long, and its axis, running nearly northeast by southwest, is in line with that of the prevailing storms of the region. Now, it repeatedly occurs that a strong wind from the southwest lowers the water at Toledo, which lies at the west end of the lake, to the extent of 7 or 8 ft., while it piles it up to the same extent at Buffalo, which lies at the eastern end. A shifting of the wind from southwest to northeast produces the opposite effect, blowing it down at Buffalo and piling it up at Toledo, thus making, oftentimes within a short period, a difference in the depth of the water at these two ports of between 14 and 15 ft. Other instances, equally striking, might be given, but this is sufficient. It would take far less than a tornado to lower the water at the northern end of the Red Sea sufficiently to lay bare the shallow channel which we have supposed to have connected the Gulf of Suez with the Bitter Lakes, permitting any number of an organized host to cross to the other side. The advantage of this theory respecting the place of crossing, over that of Dr. Robinson, is that the crossing-place is here so broad that the numbers mentioned in Exodus could be easily taken across in a few hours, since the distance would be no more than 2 or 3 miles, and the channel could be crossed anywhere along a line 10 miles in length.

Turning now to the biblical account, we find that everything readily fits into this situation. At that time, the court of the Pharaohs was held at Zoan, about 30 miles northwest of Etham,

and about the same distance northeast of Rameses, the point from which the children of Israel set out upon their eventful journey. The course of the children of Israel from Rameses was eastward along the line of the freshwater canal, and their first camping-place, Succoth, a distance of from 10 to 15 miles. Their next camping-place was Etham, which, as already marked, was probably near the present Ismailia, at the head of what was then the northern projection of the Gulf of Suez.



MAP OF LOWER EGYPT AND PALESTINE
WHEN SLIGHTLY DEPRESSED

So far they had not got beyond the reach of a flank movement by Pharaoh's army, that might cut across the desert and readily intercept them on the main road to Palestine.

But at this point there was a most remarkable and apparently suicidal diversion of the Israelites from their onward course. Leaving the eastward road to the promised land, they were, by divine direction, turned southward, and reached a camp which is described as "before Pi-hahiroth, between Migdol and the sea, before Baalzephon." The exact locality of this camp cannot be definitely determined, but every condition suits the description a little over a day's march south of Ismailia, on the west side of the Bitter Lakes. Here there is a mountain prominence, admirably conforming to the

signification of the word "Migdol," (tower) upon the west, which separates a narrow, level margin along the Bitter Lakes from the wilderness which stretches westward to Cairo. So clear is the atmosphere, and so short are the distances in that region, that one traveling along the line of the railroad from Rameses to Etham can distinctly see both this tower-like projection of Jebel Geneffeh, about 15 miles away, and the peak of Jebel Attaka, rising to a height of several thousand feet, just back of Suez 15 or 20 miles farther. No description could better fit the conditions than that which is put, by the sacred writer, into the mouth of Pharaoh: "They are entangled in the land, the wilderness hath shut them in." Surely it could not but seem that, in the characteristic words of General Grant, when speaking of one



RAISED SEA BEACH, SOUTH OF THE PYRAMIDS, CONTAINING RECENT SHELLS

division of his army, "It is bottled up: its defeat is sure." From a military point of view, no move could have been more foolhardy than that of the children of Israel in marching southward between the perpendicular face of the monoclinal ridge of Jebel Geneffeh, on the west, and the projecting arm of the Red Sea, upon the east. From such a pocket, escape could be nothing less than miraculous. There was only this advantage, that they were temporarily protected from attack upon either flank, while their rear guard was compelled to defend only a narrow field.

Dr. Dawson and others would place the fourth encampment of the children of Israel some distance north of the present extension southward of the larger of the Bitter Lakes. But this is by no means



REMNANT OF EROSION NEAR PI-HAHIRATH

necessary, and does not fit the situation as does the locality a few miles farther south, opposite what is now the dry portion of the old arm of the gulf, and which was, as we have supposed, then covered only with shallow water. In making this supposition, no violence is done to the text of Scripture or to the necessities of the case. A vast army like the hosts of Israel at that time cannot encamp in one particular point, but are necessarily spread over a considerable territory. And we are not shut off from supposing that, in the adjustment of their camp, they had time to move to the more commodious and open plain that lies about half way between the Bitter Lakes and Suez.

Supposing the children of Israel to be in this position, with Jebel Geneffeh on the west, Jebel Attaka and the Gulf of Suez on the south, the shallow projecting arm of Suez separating them from the wilderness, and a mountain peak clearly visible, which may well be Baalzephon, on the east, and pressed, on the rear, by the advance guard of Pharaoh's army, the situation would seem to be desperate. It was not within the reach of the human mind, at that time, nor would it be at the present time, to calculate upon the deliverance which came. Not only were the forces of nature which were employed to effect it beyond the power of human control, but their action was beyond reach of human foresight. At this juncture it was revealed to Moses that the waters should roll back, and a way of escape be opened. We are told that "Jehovah caused the sea to go back by a strong east wind all the night, and made the sea dry land, and the waters were divided."

We have already spoken of the effect of a strong wind in lowering the level of the narrow body of water over which it blows. No



THE "CROWS' NEST" SOUTH OF THE PYRAMIDS, SHOWING THE RAISED BEACH

situation better adapted for the full effect of winds, in producing a change of water level, could be imagined than was found here. Even should we feel compelled to interpret strictly the word "east," the contour of the shore is such that the resultant of the force would be to move the whole body of water from the head of the gulf into the broader and deeper portions to the south, thus laying bare a broad isthmus over which an immense organized host could pass in a few hours' marching.

In conclusion, it is proper to call renewed attention to the extent to which this analysis of the biblical statement and of the physical conditions in which the history is located, confirm the account. The story fits the circumstances so perfectly, or, in other words, the conditions implied so correspond with the facts stated, that the history is supported by the strongest form of circumstantial evidence. It is not within the power of man to invent a story that would be so perfectly in accordance with the vast and complicated conditions involved in it, and which we find to be actually existent. The argument is as strong as that for human design when a key is found to fit a Yale lock. This is not a general account which would fit into a variety of circumstances. There is only one place in all the world, and one set of conditions in all history, which would meet the requirements. The story is true, and it has not been, to any great extent, remodelled by the imagination either of the original writers or of the transcribers. This is scientific proof. No higher can be found in the inductive sciences than such as is here presented. The story of Israel's crossing the Red Sea is history, and not the product of mythological fancy or legendary accretion.

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.

PREHISTORIC VILLAGE SITE, ROSS COUNTY, OHIO*

[PART I]

THE Baum Prehistoric Village site is situated in Twin Township, Ross County, Ohio, just across the River from the small borough of Bourneville, upon the first gravel terrace of Paint Creek.

The Paint Creek valley is drained by Paint Creek, a stream of irregular turbulence, flowing in a northeasterly direction, and emptying into the Scioto river, south of Chillicothe. The Valley, at the site of this village upwards of two miles in width, is surrounded on the east and west by high hills which are the landmarks of nature, but little changed, since the days of the prehistoric inhabitants.

Spruce Hill, Fig. 1, with steep slope covered with a dense forest, towers above the surrounding hills on either side. The top of this hill is made a veritable fortress by an artificially constructed stone wall, enclosing more than 100 acres of land. This fortress would no doubt furnish a place of refuge to those who might be driven from the extensive fortifications in the valley below, which are in close proximity to the mounds and village of those early people.

Looking to the south and east from the village site, one can see lofty hills rising in successive terraces, no longer covered with the deep tangled forest, but transformed by the woodman's axe, and now under cultivation, producing the golden corn, which is our inheritance from primitive man who inhabited the Valley of Paint Creek many centuries ago.

The village extends over 10 acres or more of ground, which has been under cultivation for about three-quarters of a century. Almost in the center of this village, near the edge of the terrace to the west, is located a large square mound. This mound and the earthworks which are directly east of it, have been known since early times as the landmarks of the early settlers in this section of Ross county. The mound was first described by Squier and Davis in 1846, in their *Ancient Monuments of the Mississippi Valley*, page 57, where they give a description and drawing of these works. However, Squier and Davis do not mention the fact that a village was present, nor that they knew of the village, as is shown by their description.

In 1897 Dr. Loveberry, under the direction of Prof. Moorehead, examined a small portion of the village. Prof. Moorehead's conclusions are found in Vol. 7, page 151, of the publications of the Ohio State Archæological and Historical Society.

*For the illustrations in this article we are indebted to the Ohio State Archæological and Historical Society. For complete report on this Mound we would refer the reader to Mr. Mills' Monograph entitled *Baum Prehistoric Village*.



FIG. I.—MAP OF SPRUCE HILL

In the following pages I give a detailed account of the work of 3 seasons in the village, bringing to light 49 tepee sites which were more or less the permanent abode of the dwellers, 127 burials which surrounded the tepees and 234 subterranean storehouses, in which were stored the winter supplies and which were afterwards used for refuse pits.

During the summer of 1899, I examined a section of the village which lies directly south of the mound, extending the work to the west, and finally ending the work of the season directly north of the mound. During the summer of 1903, I examined a large portion of the village directly east of the mound, and during the summer of 1902, sections were examined northeast of the mound, extending along the edge of the gravel terrace, directly southeast of the mound.

The examination of these various sections was made to discover, if possible, the extent of the village, as well as to ascertain the mode of life in the various sections, and whether the same people inhabited the village in all its parts.

The land upon which this village is situated has been owned by the Baums for more than three quarters of a century. At the present time the land upon which the village proper is situated is owned by Mr. J. E. Baum and Mr. Pollard Hill, and through the kindness of these gentlemen, I was not in any way restricted in my examination of the village; in fact, they assisted me in many ways to make the work pleasant and profitable. About three quarters of a century ago, Mr. Baum's grandfather cleared this land, which was then covered with a growth of large trees of various kinds, such as the black walnut, oak, sycamore, and ash, and it has practically been under cultivation ever since. The top surface consists of from 12 to 36 in. of leaf mould, and alluvial deposit, which overlies a thin stratum of compact clay. Directly beneath this clay of hardpan is found gravel.

During the entire examination of this village, something less than 2 acres of ground was dug over, and examined inch by inch by the aid of the pick, spade and small hand trowel, bringing to light the habitations and burial places of these early people.

No one living in this section, not even those cultivating the soil for the three quarters of a century mentioned, knew that the remains of a buried city of a prehistoric people lay only a few inches beneath the surface. As the examination progressed it was evident that a few pages, at least, of the history of remote time, were being revealed in the deep pits, which served as subterranean storehouses for the early agriculturists. A few more pages were brought to light when deep down in the clay, the burial grounds for each family were discovered, and still a few more pages when the teepee, with its fireplace, stone mortars, implements and ornaments, lying in profusion upon the floor of the little home, partially told in silent language of the great drama of life, enacted by those early people.

I herewith present a drawing, Fig. 2, of a portion of the village farthest to the northeast of the mound, which shows the site of a large teepee, the largest found during the explorations and, perhaps, the most interesting in this, that this teepee was never changed and always occupied the exact ground upon which it was originally built, while in many other instances the teepee was shifted from place to place, even occupying the ground used for burial purposes, and the deserted teepee site afterwards being used for the burial of the dead, or for subterranean storehouses. As I have stated, this teepee was the largest found in the village; of oblong construction and measuring upwards of 21 ft. in length by 12 ft. in width inside of the posts. The posts were large, as shown by the post molds, and consisted of 21, set up-right in the ground, the smallest being 5 in. in diameter and the largest $9\frac{1}{4}$ inches. On the inside 7 other posts similar in size to the outer

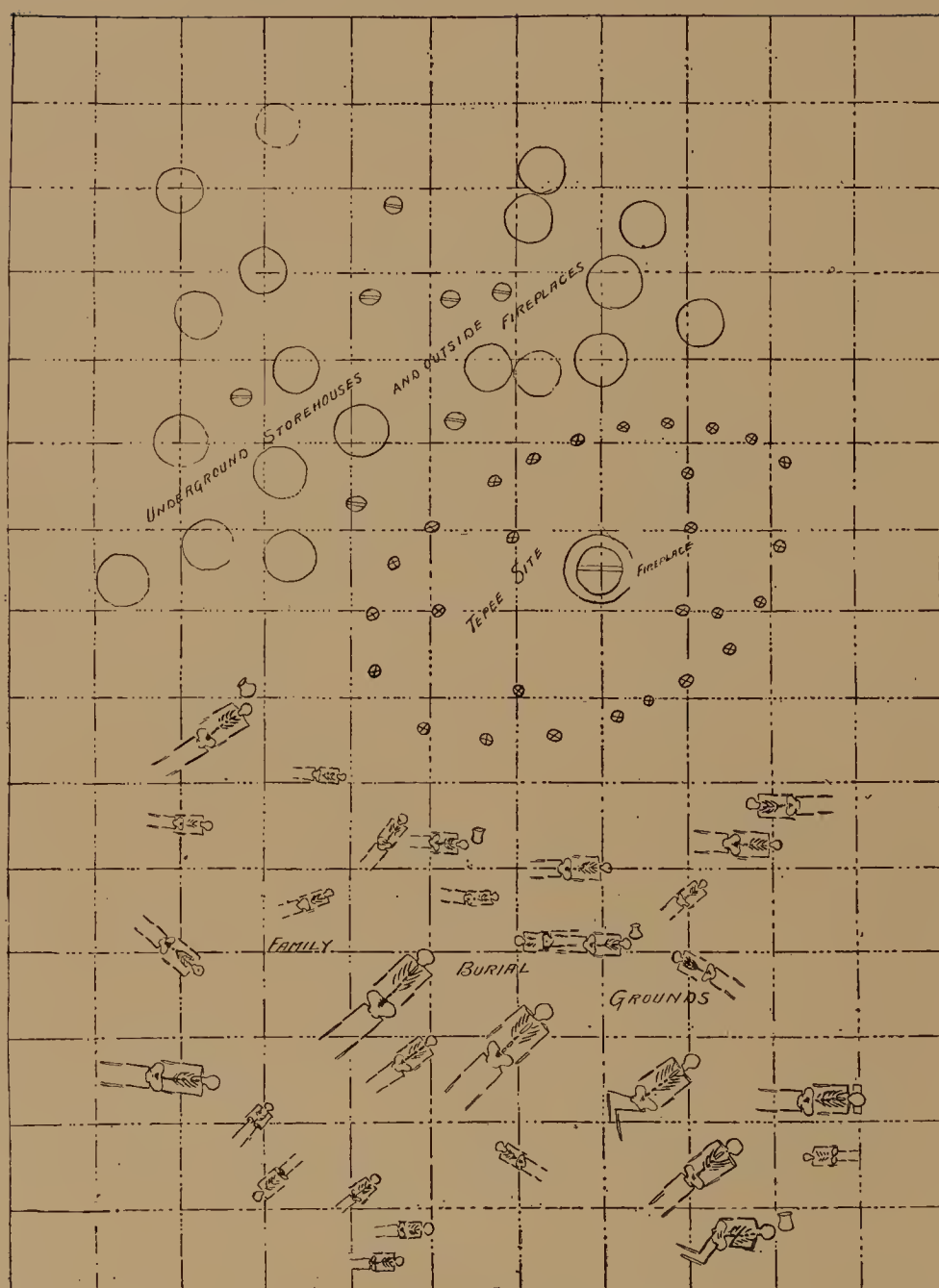


FIG. 2—TEPEE SITE, SURROUNDED ON ONE SIDE BY THE BURIAL GROUND AND ON THE OTHER BY UNDERGROUND STOREHOUSES

ones were promiscuously placed, presumably for the support of the roof. The posts for the most part consisted of the trunks of small trees, with the bark attached, placed in the ground. The imprint of the bark was quite visible, but the trees all being young it would be impossible to identify from the bark the kind of trees used in the construction of the tepee. The posts were made the proper length by the use of fire, and no doubt the trees were felled by fire, for at the bottom of the post molds charcoal was invariably found. The covering of the tepee evidently consisted of bark, grass or skins, as no in-

dications were found pointing to the use of earth as a mud plaster in the construction of the sides or top. The fireplace was placed in the center of the tepee and was about 4 ft. in diameter, 6 in. deep at the center and 3 in. deep at the edge, and had very much the appearance of having been plastered from time to time with successive layers of clay. The earth beneath the fireplace was burned a brick-red to the depth of 8 in. The original floor of the tepee had been made fairly smooth, but almost 6 in. of earth had little by little and from time to time been placed upon the floor. This earth had scattered through it implements and ornaments, both finished and unfinished, polishing stones, broken pottery, hammer stones, a large stone mortar, and



FIG. 3—ANIMAL BONES, MUSSEL SHELLS, BROKEN POTTERY, MORTARS, HAMMER STONES AND IMPLEMENTS OF BONE, STONE AND SHELL TAKEN FROM THE REFUSE PITS

many animal bones, especially of the deer, raccoon, bear, and wild turkey. As the animals named were most likely killed during the winter season, one must infer that the tepee was the scene of domestic activities during the winter, and that during the spring, summer and autumn the preparation of food was mostly done outside of the tepee at the large fireplaces marked upon the drawing (Fig. 2). However, the tepee described above is not typical of the village as far as size and shape and surroundings are concerned. The average

tepee is about one-half the size and invariably circular in form, and the posts used in their construction much smaller. The inside of the tepees are practically all the same. The surroundings of the tepee, such as the subterranean storehouses and the burial places, depend upon the size of the tepee. Surrounding the large tepee just described to the south was the burial ground where 30 burials were unearthed, the largest in the village. Of these burials 20 had not reached beyond the age of adolescents, showing that 66 2-3 per cent of the family group never reached the adult age. Fourteen of the 20 were under 6 years of age, showing that the mortality among small children was very great, being fully 70 per cent, not taking into account the 4 small babies found in the refuse pits which surrounded the tepee. The mortality of the young under the adult age in this family is greater than in any other individual family discovered in the village. Out of 127 burials unearthed in the village, 74 were under the age of 16, showing that fully 58 per cent of the children never reached the adult age. Of the 74 children under the age of 16, 56 were under the age of 6 years, showing that fully 75 per cent of the children born to these early peoples died before they attained the age of 6 years, not taking into account the 24 very small babies found in the ashes and refuse in the abandoned subterranean storehouses in various parts of the village.

The burials of this wigwam group present another interesting feature, found in only one part of the village, that of placing perfect pieces of pottery in the grave. Four burials representing 5 individuals, had each a pottery vessel placed near the head. All were carefully removed, but were more or less broken by freezing. The vessels have been restored and are on exhibition in the museum of the Society. Two of the vessels were placed with adults and each contained a single bone awl made from the shoulder blade of the deer; a few broken bones of the deer and wild turkey were found in one, and quite a number of mussel shells with a few bones were found in the other. The other two vessels were placed in the graves of children. One with a double burial, as shown in Fig. 2, a few broken bones of the wild turkey were found in the vessel, together with two mussel shells worked into spoons. The vessel was placed near the head of the older child, whose age would not exceed 4½ years. Two large bone awls made of the heavy leg bones of the elk were placed outside of the vessel and near the head, while in all the other burials where pottery was found, the awls were placed inside of the vessel. The other vessel contained bones of fish and a few small mussel shells, together with an awl made from the tibiotarsus of the wild turkey.

Another interesting feature of one of the burials of this group and which was not found in any other section of the village, was the finding of the fine-grained sand-stone slab, 19¼ in. long by 5 in. in width by 1 in. thick placed under the head of the skeleton. The slab had the appearance of having been water worn, but had received an additional polish by rubbing, the effect being noticeable over the en-

tire surface of the stone. One side is perfectly plain; the other side, finely polished, contains three indentations about $\frac{1}{8}$ in. deep, and $\frac{3}{4}$ in. in diameter.

Another feature of this interesting group is the finding of a few copper beads associated with shell beads in one of the burials. This find is the only instance where copper was found during the entire exploration in the village. However, it shows that the denizens were familiar with and possessed this very desirable metal.

The refuse pits surrounding the tepee to the north were perhaps the most interesting in the village, for here abundant evidence was found showing that the refuse pits were originally intended and used for a storehouse for corn, beans and nuts, and perhaps for the temporary storage of animal food, etc., and afterwards used as a receptacle for refuse from the camp. For some time I was of the opinion



FIG. 4—HEADLESS SKELETON, WITH A LARGE POTTERY VESSEL PLACED AT THE HEAD OF THE GRAVE

that the large cistern-like holes were dug for the express purpose of getting rid of the refuse, but as the explorations progressed I soon discovered their real purpose by finding the charred remains of the ears of corn placed in regular order on the bottom of the pit; and I was further rewarded by finding pits in various sections of the village contained charred corn, beans, hickory nuts, walnuts, etc., which had been stored in the pit and no doubt accidentally destroyed. Since completing my examination of the Baum Village I examined the Gartner Mound as well as the village site which surrounded the mound, and find that the two villages had very much in common. The family

grouping and the subterranean storehouse were identical in every respect with those at the Baum Village, therefore, I quote from my report upon this village site, Vol. 13, page 128, publications of the Ohio Archæological and Historical Society, including a photograph of explorations at Gartner's showing the close proximity of the pits and the large number exposed at one time:

The refuse pits, which are so abundant in the villages of the Paint Creek valley, were present in great numbers and distributed over the village site surrounding the habitats of the various families. Fig. No. 5 shows 10 of these pits open at one time. During the examination in the village, more than 100 pits



FIG. 5—REFUSE PITS AT THE GARTNER VILLAGE SITE

were found and thoroughly examined. The evidence produced by this examination shows that 20 per cent of the pits examined were originally used for storehouses for grain, beans and nuts, and perhaps for animal food. These pits were lined with straw or bark and in some instances the ears of corn laid in regular order upon the bottom; in other instances the corn was shelled and placed in woven bags; in others shelled corn and beans were found together; in others hickory nuts, walnuts, chestnuts and seeds of the pawpaw were present in goodly numbers. All this was in the charred state, accidentally caused, no doubt, by fire being blown into these pits and the supplies practically destroyed before the flames were subdued. The burning of these supplies must have been a great loss to these primitive people and may have caused them great suffering during the severe winters, but it has left a record of their industry which never could have been ascertained in any other way. The great number of pits found, which

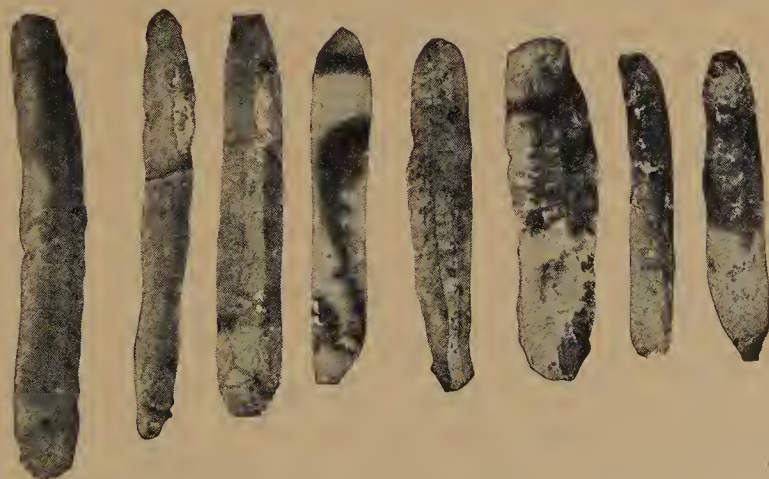


FLAKING TOOLS MADE OF ELK HORN (2-3 NATURAL SIZE)



PERFORATED CANINE TEETH
OF THE ELK (2-3 SIZE)

ARROW POINTS MADE FROM THE TINES OF
DEER HORNS (2-3 SIZE)



FLINT KNIVES MADE OF RED AND YELLOW JASPER (2-3 SIZE)

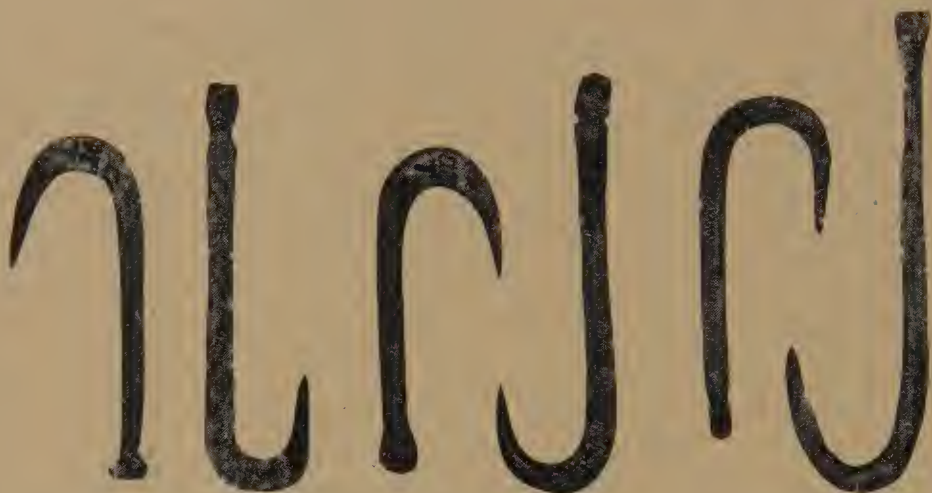


BONE AWLS, LENGTH
 $8\frac{1}{2}$ AND 8 2-5 IN.



UPPER CARNASSIAL OF
THE WOLF, GROOVED
FOR ATTACHMENT
(4-5 SIZE)

IMPLEMENTS FROM BAUM VILLAGE SITE



TYPICAL FISH-HOOKS FOUND IN THE VILLAGE (FULL SIZE)

LARGE TRIANGULAR SPEAR
(HALF SIZE)DEEPLY NOTCHED SPEAR POINT,
BLADE VERY THIN. LENGTH
TWO AND FOUR-FIFTH IN.

show conclusively, by their charred remains their early uses, would lead one to believe that all the pits found were used originally for underground storehouses and by spring time, when the supplies were likely consumed, a general forced cleaning up of their domiciles and surroundings would occur and the empty storehouse would serve as a receptacle for this refuse, which was henceforth used for that purpose until completely filled. During the autumn, when the harvest time came, a new storehouse would be dug and the grain and nuts gathered and stored for winter use. The examination of the pits has brought out the above conclusions, as evidenced by the refuse therein. Near the bottom of the pits will invariably be found the heads of various animals, such as the deer, with antlers attached, black bear, raccoon, gray fox, rabbit and the wild turkey, as well as the large, heavy, broken bones of these animals such as would likely be found around a winter camp. Further, some of the large bones showed that they had been gnawed in such a manner as to indicate the presence of a domesticated dog, whose presence was further corroborated by finding his remains in every part of the village. Therefore, taking all these facts into consideration, one must necessarily infer that the spring cleaning took place and animal bones, broken pottery and the general refuse was thrown into the pits. Further, the remains of fish are seldom ever found near the bottom of the pits, but usually occur from the top to about the middle. Mussel shells are never found at the bottom of the pits, but are usually found near the middle or half way between the middle and top of the

pit. We know that fish and mussels must be taken during the spring, summer and autumn and are certainly very hard to procure during the winter.

The bones of the old Indian dog were found in great numbers, and there is no doubt but that this dog was one of their domestic animals, for it is known that dogs were domesticated long before the earliest records of history, their remains being found in connection with the rude implements of the ancient cave and lake dwellers all through Europe. However, the history and description of the Indian dog, in the ancient times, is yet a subject far from solution. The remains of the dog found in this village site were described by Professor Lucas, of the Smithsonian Institute at Washington, as being a short-faced dog, much of the size and proportions of a bull terrier, though probably not short-haired. Professor Lucas says he has obtained specimens apparently of the same breed from the village sites in Texas and from old Pueblos. Professor Putnam, of Harvard University, for more than 20 years has been collecting bones of dogs in connection with pre-historic burials in various parts of America, and a study of the skulls of these dogs found in the mounds and burial places in Florida, Georgia, South Carolina, Ohio, Kentucky and New York, and from the great shell heaps of Maine, show that a distinct variety or species of dog was distributed over North America in pre-Columbian times. Apparently the same variety of dog is found in the ancient site of the Swiss Lake dwellers at Neufchatel, also in the ancient tombs of Thebes in Egypt. Professor Putnam further says: "This variety of dog is apparently identical with the pure-bred Scotch Collie of to-day. If this is the case, the pre-historic dog in America, Europe and Egypt and its persistence to the present time as a thoroughbred is suggestive of a distinct species of the genus *canis*, which was domesticated several thousand years ago, and also that the pre-historic dog in America was brought to this continent by very early emigrants from the old world."

He further states: "That comparisons have not been made with dogs that have been found in the tribes of the Southwest, the ancient Mexicans, and with the Eskimo."

In the latter part of the XV century Columbus found two kinds of dogs in the West Indies and later Fernandez described 3 kinds of dogs in Mexico, and as Professor Lucas has been able to trace the Baum Village dog into the far Southwest, it is very likely one of the kinds described by Fernandez. However, it must be admitted that comparisons have not been made with sufficient exactness to place the Baum Village dog with any of those described by the early writers.

During the entire exploration 50 bones of the dog were removed, representing perhaps as many individuals. Some of the bones showed marks of the flint knife upon them, others were made into ornaments, while others were broken in similar manner to bones of the deer and raccoon. Seven skulls were found, but all had been broken in order to remove the brain.

The same conditions as described above were found at Baum Village.

Another notable feature in this village was the finding of the Indian dog, and I quote from my preliminary report, page 81, Vol. X, Publication of the Ohio Archæological and Historical Society:

During the explorations at Gartner Village, which is located 6 miles north of Chillicothe, Ohio, along the Scioto river, remains of the Indian dog were found in the refuse pits similar to those at the Baum Village, and their osteological character accord in every respect with the dog found at the Baum Village site.

WILLIAM C. MILLS.

Curator, Ohio State Archæological and Historical Society.

BOOK REVIEWS

BRITISH AND SAXON BURIAL MOUNDS OF EAST YORKSHIRE*

FOR more than forty years Mr. Mortimer has been engaged in researches of the mounds in England, especially in East Yorkshire, and in this volume is given in detail the result of his work. It is one of the most thorough, trustworthy, and clear studies of the kind ever prepared. Being beautifully illustrated by his daughter, the value of the book is much enhanced. We know of no work where details are so carefully given,—whether it is as to location, method of burial, accompaniments of ornaments, implements, weapons, or position of body. It is interesting to observe that he places cremation as being practised by the more advanced of the primitive peoples.

While these mounds or barrows show great industry on the part of the builders, there are no evidences to show that they held any intercourse with other communities, except in the matter of ornaments, which were probably fashioned by people rather more advanced than they themselves. But their weapons and implements were undoubtedly of their own manufacture.

It is a very interesting fact to notice how far-reaching these customs of burial have been. We see remains of them in Siberia, along the shores of the Mediterranean, crowning the line of hills bordering the Black Sea, where they are known as “kourgans;” in Scandinavia, where we are told they are the graves of the Vikings, in England and Ireland they are spoken of as “barrows:” and in America they appear as our Indian mounds. The custom thus seems to have been very general. Whether originating from a common point, or as being the most natural disposition, and so accidentally fixed upon, by all these various peoples remains a question. Evidently in most of them there has been some preparation for a possible hereafter, as articles for use are buried with the body. It would be a most interesting study if some one could make a close examination of characteristic ones of each group and find just what points of similarity do exist. But in the meantime we will find it very enlightening carefully to note some of the many thorough studies Mr. Mortimer has made.

**Forty Years' Researches in British and Saxon Burial Mounds of East Yorkshire. Including Romano-British Discoveries and a Description of the Ancient Entrenchments on a Section of the Yorkshire Wolds. By J. R. Mortimer. With over One Thousand Illustrations from Drawings by Agnes Mortimer. London: A. Brown & Sons, Ltd. Pp. lxxxvi, 452.*

The form of these barrows differs somewhat,—some being long, while the greater number are round. The long barrow has a deep trough or trench on either side, from which trench the ground has evidently been taken to form the mound, and they are almost always placed on a line from east to west, the broad end being invariably to the east. The theory was advanced and held by Dr. Thurnam that this long form was the earliest one, and was used before the knowledge of metal had been introduced. He also held that these long chambers had been built by a dolichocephalous race, the round ones by a brachycephalous race, and in Scandinavia by a “round-headed and probably Turanian race.”

In some parts of England, groups of two or three round mounds occur, the whole number being surrounded by a ditch or trench. Mr. Mortimer has given special attention to the mounds on the Yorkshire Wolds, and this last-mentioned form is noticed but once by him on these wolds, and that is at St. Acklam Wold, where two mounds were found to be surrounded by one trench, which was not noticeable from the surface, as the ground had been cultivated.

The barrows on the wolds are different in size and shape, varying from 15 to 125 ft. in diameter, and from a few inches to 22 ft. in height, and at Garrowby Hill there is a flat-topped mound 250 ft. in diameter, and 50 ft. in height, which has never been examined.

The material of these mounds consists of earth, chalk, and flint or stone. Occasionally bits of sod have apparently been used, and in a few instances the author even noticed the remains of grass and plants. They evidently worked from the center out, and the varying layers may often be easily traced. In not a few of those opened and examined by the author, he found clay which had been brought from some distance. In many there were evidences that cremation had been practised. Canon Atkinson found, on opening barrows on the Cleveland moors, that white sand had been used which must have been transported 7 miles. This same peculiarity has been observed in some American mounds also.

Another feature is that in almost every barrow is found a circle of flint or stone which is incomplete. The author feels inclined to think that they were designed to mark off the inclosure when first begun, and the opening was left for ingress and egress.

Still another feature of these mounds is the hole or holes which are found. They are generally circular, and are about $1\frac{1}{2}$ ft. in diameter. In some places the bones of animals, rarely human bones, charcoal, potsherds, and burnt earth are found within them. The author's supposition that they may have been used as depositories for food for the dead is supported by the customs of some aborigines to-day. Many animal bones are found in most barrows, and they have generally been broken in order to extract the marrow, giving one grounds for supposing that they were used in funeral feasts. These are conclusive evidences, to the author's mind, that cannibalism was practised.

The number of burials in these barrows is uncertain, and the position of the bodies differs, except that they are generally placed on the south and east sides of the mounds, never on the north and west, probably with the idea of facing the sun.

The bodies were generally unprotected from the soil, though occasionally one has been found with a coffin made of a split or hollowed tree, in the manner of the one to be seen in the Scarborough Museum. One other was found at Sunderlandwick. Possibly this may be due to the difficulty of working wood with the stone tools which it is probable that they used.

However, Prof. Williamson in his account of the Gristhorpe mound, speaks of one found by "Sir R. C. Hoare, I think in the neighborhood of Stonehenge, where the body was deposited in the trunk of an elm," and another is recorded in the "*Annual Register* of March 12, 1767. It was in a barrow opened at Storbough, near Wareham, in Dorsetshire. The coffin was formed of a very large and rudely-excavated trunk of an oak 10 ft. long and 4 ft. in diameter. It contained the bones of a human body, wrapped up in a large covering of several deerskins, neatly sewn together, a part of which was ornamented with a piece of gold lace 4 in. long. Under the covering was found a small vessel of oak, of a dark color, something in the shape of an urn. The top of the coffin was even with the natural surface of the ground, the barrow raised over it."

In many places where suitable stones were not to be had, the graves had been lined with slabs of wood, though stones are known to have been carried 12 and 15 miles from Filey Brig probably. In a number of instances the burials had been made in abandoned dwellings, which in construction were not much better than animals have been known to fashion for themselves.

Instances have been found of evident cremation, though that fact does not serve to fix the date of burial, as the custom is of such remote antiquity that we are unable to trace its history. Cremation certainly was practised in the Trojan and Theban wars. Eustachius assigns two reasons why it came to be of general use in Greece. The first is because the bodies were thought to be unclean after the soul's departure, and, therefore, were purified by fire, and the second reason is that the soul being separated from the gross and inactive matter might be at liberty to take its flight to the heavenly mansions. Might not the legend of the phoenix have arisen from this idea? In some instances the ashes have been protected by urns, and in others by slabs of wood, and in some few cases the bones are found lying uncovered where the body had been burned. Pins and pieces of skin are also found in some cases, and Sir R. C. Hoare found traces of linen cloth in 6 different graves.

The idea that articles burned were thought to be of use after death may be found in Greek stories and histories, and it is quite possible that many primitive people held these same fancies. Both inhumation and cremation were evidently in use at the same time in

Great Britain, although the process of cremation belongs to a later period of civilization than does the former. During the Bronze age it seems to have been very common, especially in Denmark, where it was almost universal. So many of the burials in these barrows have been at different times, that it is somewhat difficult to determine accurately just where certain customs did originate.

In many barrows in various countries bodies have been found in a contracted position, for which fact many theories have tried to account. The writer of this book feels that it has been common, because, with all simple people, warmth was an object, so that they were in the habit of lying in such a position; and, being accustomed to it in life, they used it from habit in death. But a curious instance is recorded by Mr. Lukis in the Channel Islands, where the bodies were found in a kneeling position, and, judging from the remains of buttons, pins, and ornaments, it seems reasonable to infer that the bodies were often buried in their clothing. The hair of the women was often worn fastened with hairpins, but such pins have never been found in the grave of a man.

Implements or weapons have been found,—whetstones, flint knives, and scrapers of stone and bone. Implements were found made from the antlers of the red deer, but not many of them. Some bronze implements have been found, but in 80 barrows examined by Canon Atkinson only one piece of bronze was found, and that was with a cremated body. The weapons placed in barrows, however, are rarely so placed as to lead one to think they were to be used. One strange fact has been noted, and that is, that where weapons such as knife-daggers are found no traces of pottery are to be seen. These barrows in England seem to contain every stone implement which has been found elsewhere, but the same is not true of the bronze.



HISTORY UNVEILING PROPHECY*

Dr. Guinness writes largely from the stand-point of the historian of the interpretation of the books of Daniel and Revelation throughout the Christian Era. He especially advocates the year-day theory of interpreting the times given in these prophecies, and quotes at length from "M. de Cheseaux's account of his discovery of the astro-nomic character of the 1260 and 2300 years' prophetic periods." The accompanying diagrams apply these principles in locating the fulfillment of prophecies. He considers the prophecies of Revelation as for the most part fulfilled already, but does not go further and try to assign any time for the complete fulfillment in the Second Coming of Christ.

**History Unveiling Prophecy, or Time as an Interpreter*, by H. Grattan Guinness, D. D. Cloth, 476 pages with appendix and 3 diagrams of the periods of time covered by prophecy, 1905. Fleming H. Revell, New York and Chicago.

PALESTINE EXPLORATION FUND

IN the handsome volume *Painted Tombs of Mareshah* a notable discovery of inscriptions by Dr. Peters and Thiersch was told. Neither of these scholars was permanently resident in Palestine or employed in exploration, but they were well qualified to investigate the rumor of tombs discovered at Mareshah or Marissa and to copy and interpret the inscriptions. In this work of friendly coöperation they had the assistance of others, and the result was honorable to all concerned. But it is not strange that at his first leisure Mr. Macalister should wish to visit the tombs and take his turn in studying the inscriptions. This he did two years ago, and he took with him some who were experienced in examining Greek inscriptions. He was thus enabled to make some corrections in the first readings, and also to add some new inscriptions. It is to the credit of the Fund that it has gone to the expense of printing 4 pages to be inserted in the original work, so as to make it as perfect as possible, and these pages are furnished to the original purchasers.

By this revision of the inscriptions it appears that one must be read as two in one of the tombs, namely, *Katechetai*, "occupied," and *kai touto*, "and this too," meaning simply that the two loculi or cavities for bodies so marked had been filled and must not be disturbed. How plain when correctly read! And other significant phrases come out: *chaire*, "farewell;" *eirane*, "peace;" *philous*, "friends." There is a vast amount of bad Greek on tomb inscriptions in Palestine, but the meaning is not in doubt when the letters can be deciphered.

Mr. Macalister in the interval between firmans attended the annual meeting of the Fund in London and gave a good account of his work. General Sir Charles Warren presided. The deaths of Sir Charles Wilson, Canon Tristram, President Hooper of Chicago, Cunningham Geikie and others were spoken of. Mr. Macalister truly said, "We have a great record of work in the past; let us look forward to a yet greater record in the future; during the last firman the Fund put 100 pounds a month at my disposal, which enabled me to employ 80 laborers; this time I ask to be entrusted with 200 pounds a month, to be enabled to employ twice as many workmen." So may it be.

There are many inquiries about the relief maps made by Secretary George Armstrong from the ordnance survey. They are the only ones so made. They are protected by copyright. As with all our publications, books, maps, photographs, casts, etc., a reduction of price is made to subscribers of \$5.00 or more. Every map is hand finished. The larger sizes is 7½ ft. by 4 ft., the smaller 3½ ft. by 2½. The maps are shipped directly from London to the purchaser who pays

freight, etc., on delivery, in addition to the first cost, which I collect and remit to London. No duty is imposed when a map goes to a church or college which is incorporated. No map has ever been injured in transportation, or found in any way unsatisfactory. The flat maps, either in sheets, or folded on linen, or mounted to hang, are kept in stock.

THEODORE F. WRIGHT.

Honorary Secretary for the United States.

42 Quincy St., Cambridge, Mass.



EDITORIAL NOTES

SAXON GRAVES:—Human remains have been recently discovered at Hawk's Hill, Surrey, England, which Mr. C. H. Read of the British Museum believes to be those of Saxons buried about the V century.

ROMAN COINS FROM FRANCE:—On the ancient road between Evereux and Chartres, France, an Urn, has recently been discovered containing a large number of Roman coins. These bear the heads of Julius Caesar, Marcus Aurelius, the Empress Faustina and others. There are also some medals commemorative of battles.

RECENT DISCOVERIES AT DELOS:—It is reported that on August 14, six large archaic lions, carved in marble, were discovered ornamenting the Esplanade near the sacred Lake of Delos. They also found a statue of the Muse Polyhymnia. The drapery of this statue is especially fine, and is said to resemble the celebrated Polyhymnia in the British Museum. A fine head of Dionysus and also a large quantity of gold jewels differing from others which have been found there, and pieces of marble and pottery have been discovered.

ARCHAEOLOGICAL RESEARCHES IN COSTA RICA:—The Museum at Stockholm has recently published a report on the archaeological researches in Costa Rica by C. V. Hartman. The first mound which he excavated was that of Bercedes, which is 300 m. west of Rio Novillo. This is a truncated mound, the length of whose base is 30 m. and whose top is 20 m. It is 65 m. high and surrounded by a wall of the same height. Mr. Hartman thinks that its purpose was "to serve as a platform, or temple, for the large statues, which were placed with their faces towards the rising sun." He thinks that a wooden structure, possibly with a thatched roof, crowned the summit of the mound. Four human figures and one alligator were found at the base of this mound carved in hard basaltic lava.

KNOWLEDGE OF THE "ALL-FATHER" AMONG THE EUAHLAYI TRIBE, AUSTRALIA:—In the study of the religious beliefs among the native Australian tribes there is considerable discussion as to whether their knowledge of, and belief in, an "All-Father" was derived from the teaching of missionaries or was a primitive native belief. Mr. Andrew Lang in speaking of the Euahlayi tribe says that the men are very reticent about giving the whites any information concerning their religious beliefs and their knowledge of an "All-Father." He asks the pertinent question "why should blacks be so secret about religious opinions learned from the whites?" He also calls attention to the fact that if the knowledge of the "All-Father" had been learned from the European missionaries the native women would be "at least as well instructed as the native men, but to the women the very name of the All-Father is everywhere tabooed." He further calls attention to the fact that if the Europeans had introduced the idea the young men would know more about the teachings of the "All-Father" than the old men, but the reverse is the case. The weight of evidence seems to point towards a knowledge of a creator in most if not all of the primitive tribes of Australia.

ORIGIN OF EOLITHIC FLINTS:—The discussion as to whether the Eolithic flints of Great Britain and Europe were made by man or by nature is still progressing, and to the numerous natural methods by which such flints could be produced Mr. S. H. Warren in the *Journal of the Anthropological Institute of Great Britain and Ireland*, puts forward a new and somewhat unique theory. He claims that many of the Eolithic flints were produced by water abrasion from wave action, streams, rivers and floods, but that another theory is needed to account for a large portion of these flint flakes. His new theory he calls the "Soil-abrasion" method. It is found that flakes resembling the eoliths can be produced by great pressure, especially if there is a slight grinding in connection with the pressure. Such pressure and slight grinding he claims is produced in land slides and "foundering of escarpments." Besides these more marked movements of the soil, however, he thinks that the soil creep and slight land slips due to the undermining action of water percolating through soft strata and soil, called subterranean erosion, is the more potent force in producing such flints. The pressure caused by throwing ones weight heavily on several flint pebbles is sufficient to make a blunt edged flake very closely resembling, and in some cases being identical with, the eoliths. That this was the method by which nature produced a large part of the eoliths he claims is substantiated by the fact that "pressure chipped" eoliths occur abundantly in hill-drifts of the palæolithic age, but are rarely found in the contemporary river gravels. Mr. Warren also mentions the probability that many eoliths were produced by the drag of ice on flint pebble beds; also the "wear and tear on the surface of the ground, such as the stampeding of a herd of oxen over a bed of flint pebbles."



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PART XI



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NOVEMBER, 1906

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SITE OF THE BISHOP'S PALACE, ON LAKE ASCANIUS, NICEA



TOWER OF THEODORE LASCARIS, AT THE CRUSADER'S CORNER, NICEA

RECORDS ^{OF} THE PAST

VOL. V



PART XI

NOVEMBER, 1906



THE CITY OF THE CREED

THERE is a city, where 3 empires rose, and fell—a city in which the creed of Christendom was formulated and established—and yet, because of its present inaccessibility, a city seldom visited.

This city of Nicea, in Bithynia, has also a wonderful situation, on the shore of a lake of rarest beauty, surrounded by old walls, and having a background of forest and hill, such as is seldom seen in Asia Minor. It has been my good fortune to visit this city of memories 3 times. The first time I went, as the bishops did when on their way to the great council, over the mountains on horseback. As we emerged from the moss-hung trees on the hill side, we came suddenly in view of the flashing blue waters of Lake Ascanius, and the crumbling walls and ruined towers of Nicea. The second time, I went with the Byzantine historian, and editor of Gibbon, John Bury, and his wife, and we rode through pouring rain along the almost impassable roads, on the northern shore of the Lake, and crept in chill, and mud, into the desolate city through a breach in the walls. The last time, it was by still another route, taking the railroad as far as we could; and then we had the delightful company of Edwin Pears, the historian of Constantinople, whose *Destruction of the Greek Empire* and *Story of the Fourth Crusade* are the authorities on those periods of Byzantine history. I have therefore had the advantage of special knowledge, and have heard lectures, on the ground, that were privileges indeed.

Nicea was founded in 315 B. C. by Antigonos, the general of Alexander the Great, and was first called Antigone. Lysienachus later named it Nicea for his wife. Strabo and Pliny and Plutarch have all written of this city.

Nicea was governed by consuls and proconsuls under Nero, Trajan and other Roman emperors. Pliny the younger, during his consulship, built a fine amphitheater in Nicea. As there were no hills near enough to the city, to form the hollow for the auditorium, Pliny made sloping arches, or tunnels of masonry, for the foundation. Four of these remain, and though parts have fallen, and crowds of bats flutter and shriek through the dark passages, they well deserve a visit, because of the fine Roman construction, the great stones, curved and arching, being perfectly fitted together without mortar. Pliny says that he spent 40,000 pounds on this building, from his own purse, and feared he would never get his money back. Having complained to the emperor that it would be likely to bankrupt him, Pliny was repaid by Trajan himself. Strabo wrote, when he visited this theater, in after years, "I congratulate thee, Pliny, that thou hast done a great work nobly." We sat in the hot sunshine, on the top of one of these tunnel constructions of Pliny's, and looked down on the waving field of purple and white poppies that filled the auditorium. These poppies, cultivated for opium, are a fit symbol of the oblivion whose waves have nearly engulfed the teeming life that once filled this theater, that made this city significant in history. We looked out over the little collection of thatched roofs, and ruined mosques, shrunk together in the midst of the wide space marked by the old walls, and dreamed back the great events that have made Nicea a name of power.

In the II century A. D. Hadrian built gates of marble, and adorned the city in different ways. In 259 the Scythians overran it, and destroyed many of its works of art. Claudius Gothicus made a palace at the end of the lake. Valens and Justinian improved the city, and built aqueducts. That of Justinian, all fern covered, and with water dropping from its cool mosses, is still used, not only for Nicea, but for some of the surrounding towns. The emperors also built baths, changed temples into churches and monasteries, and constructed roads to connect with those of other parts of the empire.

But the greatest event of Nicean history was that for which it is known throughout the world, that Christian Council in which "church and empire first met in peaceful conference." In 325 A. D. three hundred and eighteen bishops gathered here from all parts of the then known world. Presided over by Constantine, with pomp and ceremony fitted to the occasion, the Council, after stormy and protracted discussions settled on the creed of Christendom. That creed is still recited in every communion service of the Episcopal church; that creed we heard in its original form, on Sunday morning in the old Greek church in Nicea. It is *the* creed of all the orthodox church, especially in the great empire of Russia, of which Dean Stanley says,



OUTER PART OF THE STAMBUL GATE, ON THE NORTH, NICEA

“Russia inherited the religion and policy of the *new* Rome, on the Bosphorous, far more than any western nation, inherited the religion and policy of the *old* Rome, on the Tiber.”

The greater number of authorities say that the Council was held in the palace on the shore of the Lake, in a great oblong hall, where benches were placed along the walls, for those of lower dignity, while in the center were 300 thrones for bishops and officers of the empire. Now—a few columns lie scattered on the shore, and the blue waters of the lake lap the marble steps that once led into the stately halls. A great plane tree waves its branches over the spot where the throne of the emperors once stood, and where Athanasius and Arius contended. Some one has said, “Many clauses in the Nicene creed are extinct volcanoes. Words and expressions for the truth of which men have died, are now of no great moment.” Yet the statement of the creed in regard to the unity of God, was truly necessary for the early church. The tendency back toward polytheism was a real danger, and the struggle of the Council over the form of a word (a struggle that seems to us so petty) resulted in a creed that has been a bulwark to the church.

The intense feeling which characterized the struggle has not entirely passed away in eastern lands, even in the XX century, as the following true story will show. An Englishman who has long lived in the East, was for a time on one of the Greek islands. A poor woman there, had an ugly daughter, whom she had tried in vain to get mar-

ried. She came to the Englishman in her perplexity, and he, fond of helping everyone as he was, made inquiries for her. He found that one of his servants, an Armenian, was quite enamored of the girl, and more than ready to marry her with the small dowery which the Englishman offered to settle on the pair. But when the matter was proposed to the old Greek woman, she screamed with rage. "What," she said, "marry my daughter to an Arian! I'd sooner see her in her grave!"



WALL OF NICEA AS SEEN FROM THE BISHOP'S PALACE

That great Council also settled many other things, in its famous 20 canons, besides the Creed of Christendom, such as the canonical books of Scripture as now received, and the time of Easter. In the oldest Greek church of the present Nicea we found a quaint painting representing the Council. The bishops sit in solemn rows all exactly alike, Constantine being on a throne in the middle, while God the Father, in clouds above, presides over the whole, and looks with interest on Athanasius and Arius who stand in remarkable perspective, on the bottom line of the picture. Arius, to show the evil of his doctrine, is dressed entirely in black, and the bishops near him are all turning away their heads, with evident abhorrence, and impossible anatomy.

There are vivid contrasts in Nicea, and one passes from age to age in the twinkling of an eye. From the church, where we heard the creed intoned in ancient Greek, we passed with the whole congregation out to the fields. The priest was in all his gorgeous robes, and his acolytes carried a desk and banners, and much church panoply. At last we all stood still in the burning sun, and the priest prayed in



PILGRIMS OF TO-DAY ON THE WAY TO NICEA

Turkish (that all might understand) a long and touching prayer for rain. He said, "Oh Allah, the people are weary and famished, the cattle hang their heads and can not work. Seest Thou not? Oh, see and pity us! The flowers droop, and lose their colors, the dogs lie by the roadside with their tongues hanging out, the little lambs suffer, and the fields give no fruit." He went on describing all nature in a drought—the distress in every home—in simple and beautiful words, and at the end of every sentence, the great crowd of peasants swayed and groaned and cried, "It is true, O Lord, it is true!"

Then also, as we came back to our lodging place one day, full of dreams of Roman emperors and Christian Council, of Byzantine battle and siege, we entered into the very atmosphere of the Arabian Nights. We found in the courtyard of our primitive hostelry, an old blind Turk, telling the oft-repeated tale of the love of Chosroes and Shireen. The story-teller sat cross-legged on the ground, touching the zither on his knees, and to its weird accompaniment, chanting, with the constant repetition and flowery digression so dear to the Eastern mind, the passion and woe of the Persian lovers. The 20 or 30 men gathered around him, squatting on their heels, made excited exclamations of "Aman! Aman!" at all the most pathetic points of the narrative, and gathered closer with staring eyes, when passion and death were alluded to, as if the old story were ever new to them.

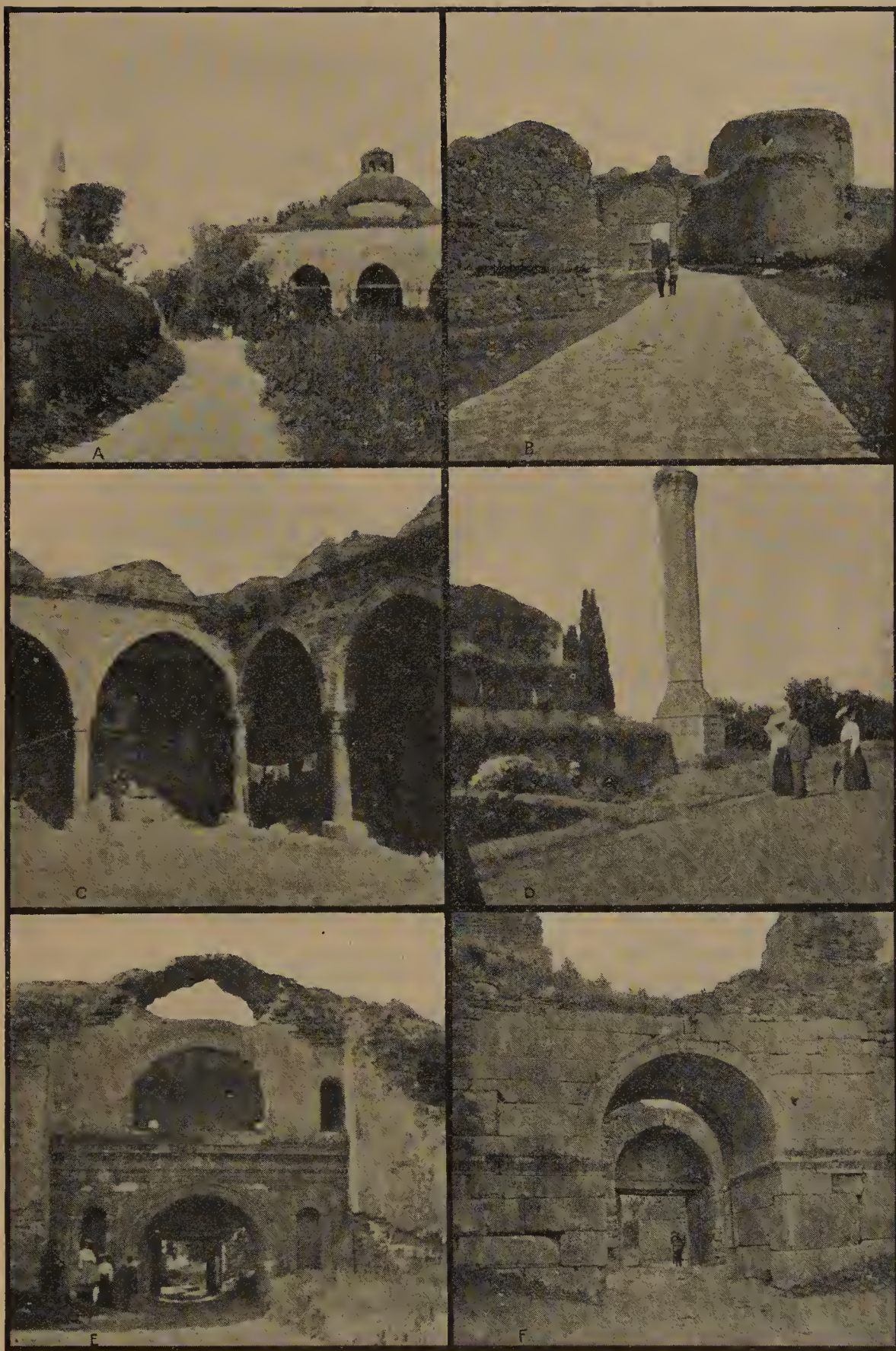
The second Council of Nicea was held in the VIII century. This city was chosen by the Empress Irene, because, being at heart a pagan,

she felt that the burning question of the time, *viz.*, the worship of images, would not be decided as she wished it to be in iconoclastic Constantinople. This Council was held in the old church of St. Sophia, now a complete ruin, whose crumbling walls show faint traces of former glory. We rode our horses right under its fallen arches, and in the apse, deep in ashes and dirt, sat a ragged beggar who cheerfully offered for sale a handful of mosaics which he had scraped together from the debris.

While Nicea was thus important in church annals, it was not the center of *imperial* power until 1080 A. D., when the Seljukian Turks made it the seat of their government. This court of the Sultans rivaled in brilliancy that of Cordova. The Seljukians brought art and prosperity and civilization. They introduced here the faience tiling in exquisite blues and greens, which makes the great charm of their buildings in Konia. They turned St. Sophia and other churches into mosques, and built *imarets* (soup kitchens), on the domed roofs of which, great storks' nests now rest. Nicea is, indeed, a city of storks, and on every housetop and on trees, and broken walls the wise birds clap their bills, and pose on one dignified leg.

Only a few years after the establishment of the Seljukian empire came the First Crusade, and here, near Nicea, that great *talker* of the Crusades, Peter the Hermit, was killed by the Seljuks. In 1087, the magnificent, well-organized army of that first Crusade, came to Constantinople, and took the road, which is now the route of the railway, to Nicomedia. Then they went over the mountains to the south side of the Lake Ascanius, till they came to the slaughter place of Peter the Hermit's expedition, and the gruesome tale is told that the bones of that slaughter were so numerous, that they were actually used in making a rampart to defend the army against the Seljuks, who still held the city of Nicea. A terrific battle took place in which 600,000 Christians were engaged. There were awful barbarities on both sides. Each army threw into the camp of the enemy, the heads of those taken prisoners. In the course of the siege, the Sultan's wife and family endeavored to escape by boat on the Lake, but were captured by the Crusaders. At last the Seljukian leader considered further defense hopeless, and an arrangement was entered into, by which the leaders of the Crusade could pursue their first object (the capture of Jerusalem), and the city of Nicea was taken possession of by the Emperor Alexis from Constantinople.

No other Crusade concerns Nicea, till the Fourth, which Mr. Pears describes as a huge filibustering expedition. The designs of that truly great man, Pope Innocent III, were frustrated through the intrigues of the Venetian Doge Dandolo. Constantinople was captured by the Crusaders, who established a Latin empire there, and despoiled the imperial city of its finest works of art, among them the famous bronze horses, that now appear in Venice on St. Mark's church.



A. A. Seljukian imaret (soup kitchen) on the right and the Green Mosque. B. Yeni Shebir Gate on the south, also called Orkharis Gate. C. Interior of St. Sophia, where second council was held. D. Ruins of St. Sophia. E. Hadrian's Gate. Aqueduct enters beside the gate. F. Inner part of Stambul Gate on the north.

The Greeks who had been driven out of Constantinople made a stand at Nicea, under Theodore Lascaris. There may still be seen on every side, the remains of their defenses. The city became again the Capital of an empire. The emperors of Nicea gathered around themselves the most learned, as well as the bravest, of the Greeks, who by the Latin invasion had been scattered through the Balkan Peninsula, and Asia Minor. When, in 1258 A. D. the miserable Latin empire of Constantinople came to an end, and the imperial city was once more captured by the Greeks of Nicea, that city again took a secondary place in the Byzantine world.



ONE OF THE SCULPTURED MEDUSA HEADS FALLEN FROM THE WALL
AT NICEA

Unfortunately the results of that Latin occupation were such, that the newly restored power was never again able to resist the steady encroachment of the Turkish hordes, pouring in from Central Asia; and it was that branch of the Turks, destined to destroy the Greek Empire, i. e., the Ottoman Turks, who next made Nicea the seat of empire. In 1330 A. D. Orkhan, the Ottoman Sultan, besieged Nicea, and conquered it, unhindered by the Emperor Adronicus. He allowed the Greek garrison to go out safely, and the city was for some years the center of Turkish power. This power, of course, left Nicea, when Constantinople became the Turkish capital in 1453 A. D.; and gradually the place has shrunk in size and importance until now it is hardly more than the home of great memories. It has never, so far as I know,

been the scene of any scientific excavation, and yet, with its history it would surely be a rich field for investigation. Even as it is at present, it is a deep delight to go into its mosques, with their fine Saracenic carving and tiling, to study the many inscriptions on the walls, or on the beautiful tower of Theodore Lascaris, to pass through Hadrian's gate, or penetrate into the tunnels of Pliny's theater.

An Arabic sentence graved on the wall at Nicea is a summing up of the thoughts, that must sweep over one there. It has been thus translated:

"For all men the hour strikes,
All kingdoms come to an end;
But the Eternal, Everliving One
Can not be bound by death or time."

ISABEL FRANCES DODD.

American College for Girls, Constantinople, Turkey.



THE SHELL HEAPS OF FLORIDA

FROM the earliest known times to the present, Florida has been a land of romance, delight and tragedy. It has possessed a fascination for adventurers, archæologists, seekers after health or wealth, and at one time provided a favorite asylum for refugees. It has given and withheld its treasures, has bestowed healing and hurt, and remains a country of contradictions. Volumes could be written pertaining to its many sided history, its manifold phases of life and industry, its flora and fauna, its geological mysteries. For the present let it be our purpose to attempt some study of those earliest evidences of human occupation, the shell heaps or mounds. These have been an object of interest for many decades. The files of Smithsonian Reports for 40 years back at least, present occasional articles on the subject, while pamphlets and books have not been few.

The shell heaps of Florida probably number thousands. The state has the remarkable extent of over a thousand miles of sea coast, besides rivers and lakes in profusion. Orange county alone has over a thousand lakes. These conditions, together with that of the climate, have vital connection with the existence of the shell heaps. It is needless to say that many other parts of our country contain similar remains of a long past life. They are found far up the New England coast, and Westward as Southward. Blannerhasset island in the Ohio has heaps large and abundant in relics; but Florida can be styled the shell heap region.

Beginning at the northeast part of the state and going up the St. John's river the seeker for the prehistoric remains soon finds abundant material to feast his eyes and tempt his spade. Shell heaps large and small occur on both sides of the river. Palatka and its vicinity provide a number, and the search along the banks on to Sanford will be rewarded at quite frequent intervals. The same is true of exploration from Palatka up the Ocklawaha, or beyond Sanford along the Wekiva. More than 50 of these river-side heaps have been reported on.¹ They consist in the main of *Paludina*, *Ampullaria* and *Unio*



STRIKING FEATURES OF THE LARGE MOUND NORTH OF NEW SMYRNA, FLA.

shells. There is considerable range in the size of these heaps, as everywhere; some along the St. John's and tributary streams being several hundred feet in circumference, and from 3 to 20 ft. high. Similar heaps are found by the lakesides, as, for example, on Lake Jessup in Orange county, where they cover parts of acres to the depth of several feet.

Starting at Anastasia island and moving down the East coast, remarkable heaps of marine shells are found. The aggregation below Matanzas Inlet covers over 30 acres; like others, being highest on the water side where it rises to about 35 ft. The field in the rear has many circles of shells from 4 to 8 ft. deep and 12 to 15 ft. across.²

¹For full treatment see Dr. Jefferys Wyman's *Fresh Water Shell Mounds of the St. John's River*.

²For a description of this heap see Dr. De Witt Webb's article in the *Proceedings of the U. S. National Museum*, Vol. XVI, 1893, pp. 695-698.

A mile and a half north of New Smyrna there was a heap covering over 800 ft. square, of varying depth, rising on the central shore side to a height of 30 ft. or more.³ In the village the removal of the top of a large heap disclosed a small, substantial stone fort. Just below New Smyrna a mass of shells is piled up for 400 ft. along the river. Next comes "Turtle Mound," of unusual height, forming a rounded bluff at the water's edge. The Oak Hill heap still further down the coast has a diameter of many hundred feet, and rises to a height of 18 to 20 ft. The shore at the mouth of the Banana river shows immense accumulations of shells. About 20 shell heaps of the east coast have been described, and some of them have attained to postal card notoriety.



FORT IN NEW SMYRNA MOUND

Southwest Florida is rich in these relics of the past, investigation bringing to light no less than 50 along the south half of Charlotte harbor, some rising to a height of 30 ft. At the mouth of the Manatee river a mound extends nearly 600 ft. in length, with a height of from 15 to 20 ft. The shores of Tampa, Hillsboro and Four Mile bays and vicinity boast an abundance of shell heaps. The largest are from 200 to 700 ft. broad, and from 15 to 30 ft. high. Going northward still further, Cedar Keys is found to be a fertile field for arch-

³On this artificial bluff stood the familiar landmark known as the Rock House. At the time of a recent visit the writer found only a part of the ruin remaining, and the mound being rapidly removed by the East Coast Railroad for road making. The "house" was probably a lookout contemporaneous with the stone fort mentioned.



REMAINING PEAK, WITH ROCK HOUSE AND RED CEDAR TREES

æological work, while Pensacola bay with its shell heaps large and small affords still further inviting opportunities for research.⁴

This is by necessity only a brief summary of the more familiar and important heaps and heap localities.

Shell heaps are composed of varieties of shells, ashes, pottery chiefly in fragments, soil superimposed and in strata, bones of birds, bear, deer and other animals, as well as occasionally human,⁵ claws of crabs, bones of turtle, shark, porpoise, and other fishes. They contain implements of bone and flint, sinkers, bowls, spoons and other utensils of shell usually made from *Fulgur carica*, *F. perversa* and *Strombus*. Very few objects of metal have been found. In some cases beads and other ornaments of glass have appeared. It will be understood that this is a general list covering the finds in heaps in all parts of the state. The pottery is of clay or sand and clay, and is plain and ornamented, often bearing the marks of the basket or net mould.⁶ The heaps along the coast consist mainly of oyster shells, with clam and conch shells, various bones and the usual large amount of pottery, seldom unbroken. In the Tampa bay heaps arrow heads,

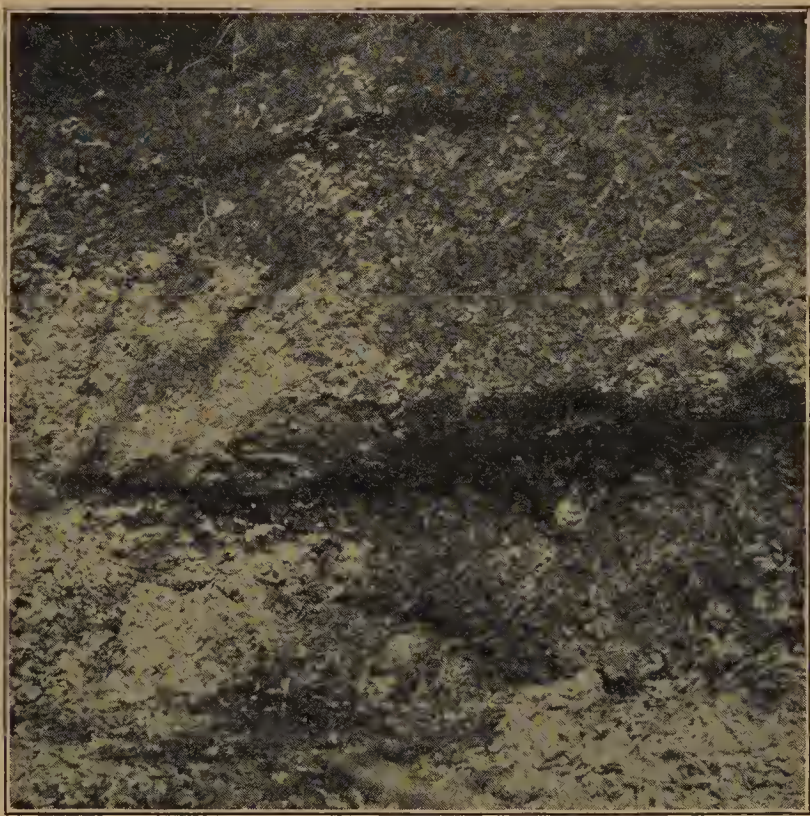
⁴It was in this vicinity that Mr. F. H. Cushing, ethnologist, tireless and enthusiastic worker for the Smithsonian Institution, was engaged in investigating the shell heaps shortly before he passed away in 1900.

⁵The bones of mammals were broken for the extraction of the marrow. The human bones are in such condition and position as to lead to a theory that some of the heap builders were cannibals.

⁶Dr. Webb reports 100 different varieties of ornamentation on the fragments found in the Matanzas Inlet heaps.

scrapers, pendants, necklaces and quartz implements have been found. Rude images of clay have been dug up about Choctawhatchee bay, representing human, duck and owl heads.

All the evidence tends to give a "Kitchen Midden" origin to the shell heaps. The fresh and salt waters abounded in shell fish large and small and good for food. Tribes of rude men supplied with most primitive implements would thus find unfailing supplies near at hand. Individual families, small communities or large, threw here and there the emptied shells and bones remaining from their meals. The pieces of fragile pottery were added to the refuse. These dumps about the dwellings would soon provide an elevation for the fire, for evidently



STRATA IN SHELL MOUND

food was eaten cooked, the depressions would rapidly be filled, and as the heaps grew larger the dwellings would be built on them. The advantages of such sites are apparent. They ensured good drainage, and as they increased in height afforded some immunity from mosquitos, snakes and many kinds of insect life, and gave purer air.⁷ Along the west coast the heaps show that they would protect from high water, and behind them there would be found shelter from storms. Raised high along the shores they became lookouts, and a certain fort-like defence against enemies. The size of the heap may

⁷The choice of the same sites for modern houses, stores and other buildings as well as for planting groves and gardens gives corroboration to this view.

indicate the size and duration of the aboriginal settlement, though most of them show interrupted growth. The shells are bulky and imperishable. Specimens gathered from the seaside heaps especially even now appear fresh and clean. The description of the heaps as "Mighty monuments which want and hunger have erected to appetite" is striking, but not altogether just to the aborigines. They had to eat to live, and the remains we have show a step towards the architectural, sanitary, military and æsthetic heights of our own time. Surely no modern devotee to the esculent *Ostrea Eduli* will feel like casting a stone at these builders.

As to the age of the shell heaps only conjecture is possible. The presence of trees of great age on them, and even their hiding by dense



ON THE SUMMIT OF THE SHELL MOUND

forest growth gives some idea of their antiquity. Some heaps or parts of heaps may, of course, be the work of comparatively modern people. A large heap at Cedar Keys investigated and reported by Mr. S. T. Walker, showed 6 inches of soil on top. Below this were several feet of shells with fragments of fine pottery of "elegant design," and neatly made implements of bone and shell with axes, arrow and spear heads of stone. Then came 2 ft. of soil with a few fragments of pottery inferior to the first. Below this were 4 ft. of shells with pottery rudely ornamented and primitive implements of bone and shell. Next below there was more soil and 3 ft. of shells, the lowest

strata, with rude, heavy pottery. Mr. Walker believes that a conservative estimate of the time required for the deposition of the soil since the builders ceased adding to the heap, and, relying on a critical comparison of the pottery and implements in the different strata, in which the stages of growth are clearly marked, would give a thousand years as the age of the oldest shell heaps. One investigator describes an oyster shell heap with every indication of artificial building, and which covers a large surface 6 ft. deep near Orange Lake. The present elevation of the lake is 48 ft. above the sea, and the nearest living oyster bed is 43 miles distant. The heap must have been made when the lake was still an arm of the sea, before the state attained its present elevation. The divisions of the heaps by layers of soil may



INDIAN RELICS FOUND IN THE NEW SMYRNA MOUNDS

indicate the ravages of disease, removal, forced migration on account of enemies, and so irregular occupation and work of successive races and generations in the making of the mounds.⁸

For years the heaps in certain localities have been a source of excellent material for road and walk making and for lime. Northern tourists in many Florida towns may walk on all that remains of some aboriginal feast, and with a little search find bits of ancient pottery under their feet.

Much thorough work has been done by scholarly men in the study of the shell heaps, yet much more may still be accomplished. The field is open and will be rewarding. Map making, photographing,

⁸One can only theorize about the population of the state, though there are indications that at certain periods it must have been large.

verifying of old reports, summarizing of information, exploration and investigation of new material and collecting of relics should go on. Little can be expected from the state government, but private individuals can serve as in the past, and certain institutions may be relied on heartily to encourage the work.

CHARLES DE WOLFE BROWER.

Winter Park, Fla.



RECENT ARCHAEOLOGICAL LEGISLATION*

THE concentration of public attention upon bills affecting the business interests of the country which were passed by Congress during the last session has obscured the merit of other measures which received favorable consideration but which, having no commercial or political significance, were rarely mentioned in the newspapers. Among these were three of importance for the promotion of archæological studies: an act incorporating the Archæological Institute of America, approved May 26; an act for the preservation of American antiquities, approved June 8; and an act creating the Mesa Verde National Park, in Colorado, approved June 29.

The Archæological Institute of America was founded in the year 1879, by Professor Charles Eliot Norton and other gentlemen in Boston. Its purpose is to promote and direct archæological research. This purpose it seeks to accomplish by aiding in the maintenance of schools for archæological study in Athens, Rome, and Palestine; by maintaining fellowships, as in American Archæology and in Mediæval and Renaissance studies; by sending out expeditions for special investigations; by assisting the efforts of independent explorers; by publishing the results of exploration and research; by holding general meetings for the reading and discussion of papers on archæological subjects; and by disseminating exact information in regard to the progress of research by means of free public lectures under the auspices of Affiliated Societies.

Five fields of archæological interest have thus far engaged the attention of the Institute—Greek, Roman, Oriental, American, and the Italian Renaissance. The first of the foreign schools to be established was that in Athens, which was founded in 1881; the school in Rome was opened in 1895, and that in Jerusalem in 1900. These schools are in charge of Managing Committees; and the work in American Archæology and the fellowship in Mediæval Studies are also directed by committees. The number of Affiliated Societies of the Institute is

*A briefer statement appeared in *The Nation* for September 27, under the title *Archæological Bills passed by Congress*.

now twenty-one, comprising a membership of nearly 2000 persons. Eight of the Societies are in the Atlantic States, eight in the Central States, and five in the Western States. The Western Societies are the Colorado Society, the Utah Society, the Southwest Society, centered at Los Angeles; the Northwest Society, having its membership chiefly in the State of Washington, and the San Francisco Society, the organization of which was consummated shortly before the great earthquake and is maintained, under disheartening conditions, with a devotion to scientific aims worthy of all praise.

The incorporation of the Institute had become a necessity on account of the complexity of relations arising from the extension of its work, and the need of making permanent provision for its financial support, while in view of the scope of its undertakings and the geographical distribution of its membership, incorporation as a national rather than as a state institution was seen to be desirable, provided that this could be accomplished; for Congress is increasingly reluctant to grant charters. The bill of incorporation was prepared by Mr. John B. Larnier, a member of the Washington Society, in association with a special committee of the Institute. It was presented in the Senate by the Hon. Henry Cabot Lodge and in the House by the Hon. Nicholas Longworth, who were so successful in overcoming objections that it was passed with very little debate.

Under the new organization, as in the past, the government of the Institute will be vested in a Council consisting of the president of each affiliated society and a few other ex-officio members, with additional councilors chosen by the Affiliated Societies; its annual meetings "may be held in such places as its by-laws may provide." It is authorized to hold property "to an amount not to exceed one million dollars." The beginnings of an endowment have been made by the funding of life memberships, and it is hoped that large additions will soon be received. The Institute will hereafter have an office in Washington.

In the past few years a number of bills have been brought forward in Congress designed for the preservation of American antiquities, but notwithstanding the urgent need of protective legislation—familiar to all readers of *RECORDS OF THE PAST*—none of them was able to command a hearing in both the Senate and the House. In January, 1905, the Committee of the Archaeological Institute on the subject invited a similar committee of the American Anthropological Association to meet for a conference in Washington; as a result of their deliberations a measure was framed which was submitted to the House Committee on Public Lands at a largely attended hearing, and was sympathetically received. The Senate passed the bill, but in the short session no opportunity was found for presenting it to the House of Representatives.

That the bill of 1905 failed to become a law is perhaps as well; for the present act, which had in advance the approval not only of the committees of the Institute and of the Anthropological Association

but also of the heads of the Government Departments concerned, is briefer and in several respects more satisfactory. This was championed in the House by the Hon. John F. Lacy, Chairman of the Committee on Public Lands, to whom all interested in the preservation of our antiquities are particularly indebted, and in the Senate by the Hon. Thomas M. Patterson, of Colorado.

The first section of the Act prescribes a penalty for the unauthorized collection or destruction of antiquities upon the public lands. It reads: "Any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall, upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court."

The Departments of the Government referred to are those of the Interior, Agriculture, and War. The fourth section requires that the Secretaries of these Departments "shall make and publish from time to time uniform rules and regulations for the purpose of carrying out" its provisions. Individual officials of several of the Bureaus have in the past done what they could, without adequate authority and without funds for the employment of custodians, to protect the ruins in their jurisdiction.

The second section is constructive, and far-reaching. The President of the United States is "authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic and scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected;" and it is further provided that "when such objects are situated upon a tract covered by a bona fide unperfected claim or held in private ownership, the tract, or so much thereof as may be necessary for the proper care and management of the object, may be relinquished to the Government," the Secretary of the Interior being authorized "to accept the relinquishment of such tracts on behalf of the Government of the United States."

The reservation of parcels of public land from entry may, under the act, include not only areas containing prehistoric remains, but also historic structures and objects of scientific interest, such as a crater lake or a natural bridge. And the way is made easy, as it should be, to transfer to the National government such prehistoric remains, historic monuments, and objects of interest now in private ownership as it shall seem worth while for the Government to accept and protect.

It is understood that the Bureau of American Ethnology is already preparing data to be submitted to the Interior Department for guidance in withdrawing from entry as soon as practicable the sites on the public lands containing the most important archæological remains.

Some members of Congress and government officials at first favored limiting to the Government itself the prerogative of conducting excavations upon the public lands. The archæologists, however, were unanimous in the opinion that while the privilege of conducting excavations should be carefully guarded, the loss to science would be great if no excavation should be permitted except under governmental auspices; and this view was emphatically stated by Mr. W. H. Holmes, Chief of the Bureau of American Ethnology, which had a more direct interest in the matter than any other Bureau. The point was yielded; and the third section of the act grants the right to excavate, under suitable restrictions, to properly accredited scientific institutions, thus making possible the formation of collections of antiquities for "reputable museums, universities, colleges or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects," all gatherings of antiquities to be made "for permanent preservation in public museums." Thus, while the law puts a stop to the scandal of commercial excavation on lands under governmental control, it is sufficiently liberal in its provision for scientific excavation conducted under proper auspices for the public good.

The Mesa Verde National Park, which has been set aside for the preservation of its cliff-dwellings, is situated in southwestern Colorado. It comprises a strip of land along the Mancos River and is 14½ miles in length; its area is 65.5 square miles. The cliff-dwellings belong to a series of which the most important representatives are not in the Park itself, but on lands belonging to the Indians, in the edge of the Southern Ute Reservation, which adjoins it on the south. The protection of these monuments also is assured by a provision of the act which places under the custodianship of the Secretary of the Interior all prehistoric ruins that are situated on Indian lands within five miles of the boundaries of the Park; these are to be "administered by the same service that is established for the custodianship of the Park."

The creation of the Park is in direct response to praiseworthy efforts of public-spirited women of Colorado, who recognized the importance of the remains, formed an association to secure their preservation, and inaugurated so vigorous a campaign that many persons outside the State became interested in the project. The efforts of Mrs. W. S. Peabody, of Denver, were particularly successful in arousing interest in the measure which has now become a law.

The boundaries of the Park were fixed last spring by a survey conducted by the Bureau of American Ethnology with the help of Mr. Edgar L. Hewett, Fellow of the Institute in American Archæology, who was acting also under the authority of the Bureau; Mr. Hewett accompanied the surveyors and designated the monuments to be in-

cluded. In the next session of Congress provision will undoubtedly be made for the care of the Park, and for the granting of concessions to those whose services are necessary for the accommodation of tourists, as inn-keepers and liverymen. Perhaps in the future a special bureau will be organized for the care of the national parks outside of Washington; it would seem as if much might be gained in both efficiency and economy of administration by placing them all under one management.

FRANCIS W. KELSEY.

University of Michigan.



PREHISTORIC VILLAGE SITE, ROSS COUNTY, OHIO

PART II

FOOD RESOURCES

OUR examination of this village and the evidence revealed by the refuse pits and the sites of their little homes shows that these early inhabitants were not savages depending entirely upon the wild food for their subsistence, but were barbarians having a settled abode, a developed agriculture, the storage of food supplies for future use, and the domestication of at least one animal, namely, the Indian dog, which of all animals would best show adaptation to his master's wants and pleasures.

Animal Food.—It is evident from the large quantity of animal remains found in the pits, that the inhabitants of Baum Village site depended upon the chase for a very large part of their subsistence. Everywhere about the village, especially in the abandoned storehouses and in the sites of wigwams, the broken bones of various animals, that were used as food, were found in abundance. The abandoned storehouse was a veritable mine for animal bones. A memorandum of all the bones taken from one pit was made. The pit measured 3 ft. and 7 in. in diameter by 5 ft. 10 in. in depth and contained 375 bones and shells, some of which were mere fragments, while others, such as the leg bones of the beaver, ground hog and racoon were in a perfect state. A summary of all the bones and shells is as follows: Virginia deer, 35 per cent; wild turkey, 10 per cent; 2 species of fresh water unios, 10 per cent; gray fox, 10 per cent; raccoon, 5 per cent; black bear, 5 per cent; box turtle, 5 per cent; the remainder of the bones being divided about equally between the ground hog, wild cat, elk, opossum, beaver, rabbit, wild goose, and great horned owl. By far the largest number of bones were those of the Virginia deer (*Odocoileus virginianus*). Out of 20 barrels of bones brought to the museum, fully 35 per cent were of this animal. It will therefore be

safe to say that 35 per cent of all the animals used for food by these aboriginal inhabitants of Baum Village were the Virginia deer. At the Gartner Village, 6 miles north of Chillicothe, this animal constituted fully 50 per cent of all the animals used for food.

The general characteristic of the deer at Baum Village was similar to the modern species. The other mammals found in the village were the elk, black bear, wolf, mountain lion, wild cat, raccoon, gray fox, Indian dog, skunk, mink, otter, fisher, opossum, ground hog, beaver, musk rat, rabbit, gray squirrel, weasel, and rice field mouse.

Fully 80 per cent of all the bones of birds found in the village belong to the wild turkey. The other birds represented were the great horned owl, Canada goose, trumpeter swan, great blue heron, bald eagle, mallard duck, pintail and canvasback. The snapping turtle and box turtle were found in great numbers in every part of the village.

The presence of great numbers of mussel shells, both in the pits and surrounding the tepee sites, would indicate that this shell fish was much used for food. At the Gartner Village the remains of large mussel lakes were found,¹ but the large pits used in the preparation of the mussels for feasts were not found in the Baum site. However, large holes, from which earth had been taken, perhaps for use in the construction of the mound, were filled with the shells, and surrounding pits also contained great numbers of the shells, indicating that a great feast had taken place, and that the mussels were prepared in a way similar to those at the Gartner mound.

Plant Food.—In order to secure data of certain cultures in each country, historical records are quite important and help to determine the origin of certain agricultural products. These records show that agriculture came originally from three great regions which had no communications with each other, namely, China, South West Asia and Egypt, and inter-tropical America, and from these three regions began great civilizations based upon agriculture. However, we find that history is at fault in giving us much early data concerning the third great center of civilization which does not even date from the first centuries of the Christian era, but we know from the widespread cultivation of corn, beans, sweet potatoes and tobacco, north and south of the center of the American civilization, that a very much greater antiquity, perhaps several thousand years, must be given for the perfection of these plants up to the time when history begins.

The finding of charred corn, beans, nuts and seeds of fruits, and even the remains of dried fruit, in the subterranean storehouses in various parts of the Baum Village, leads one to believe that the early inhabitants were agriculturists enjoying a certain degree of civilization. The most important product raised was corn—*Zea mays*.² At

¹Accounts of the mussel bakes are given in the Pub. of the Ohio State Archæological and Historical Society, Vol. XIII.

²The identification of the corn, beans, nuts and seeds from the Baum Village was made by Professor J. H. Schaffer of the Dept. of Botany, Ohio State University.

the time of the discovery of America in 1492, corn was one of the staples of its agriculture, and was found distributed from the La Plata Valley to almost every portion of Central and Southern United States. The natives living in this vast region had names for corn in their respective languages. A number of eminent botanists have made careful explorations to find corn in the conditions of a wild plant, but without success.

The corn unearthed in the village was always in the abandoned subterranean storehouses and invariably at the bottom of the pit. When any quantity was found the charred lining of the storehouse was present, which lining frequently consisted of long grass and sometimes bark. The corn, when found in the ear, was laid in regular order, devoid of the husk, and consisted of two varieties, an eight-rowed and a ten-rowed variety. The eight-rowed variety had a cob about half an inch in diameter and short, while the cob of the ten-rowed variety was larger and longer. The grains and cobs having been charred, were in a good state of preservation.

In other pits the corn had been shelled and placed in a woven bag and the charred, massed grains were removed in large lumps with portions of the woven bag attached. Therefore it seems reasonable to believe from the presence of so many storehouses for the care and preservation of their most nutritious agricultural product, that corn was the one staple upon which prehistoric man depended to tide him through the cold winters, and until the harvest came again.

Kidney Bean (*Phaseolus vulgaris*)—According to J. S. Newberry, who published the first flora of the State (1859), the wild bean occurs generally throughout the State. This bean is found in abundance in the pits, sometimes mixed with shelled corn and placed in a container, and sometimes placed in the storehouse along with nuts and dried fruit of the wild plum, and was no doubt one of the agricultural products of aboriginal man of the Baum Village Site. According to the latest discoveries, in the Peruvian tombs of Ancon and other South American tombs, the origin of the bean was perhaps in the inter-tropical American civilization, and no doubt spread northward to the Mississippi Valley similar to maize. Beans were found also in the storehouses at the Gartner Village,³ and in some of the burials of the Harness Mound explored in 1905. Three species of hickory nuts were found in abundance in the storehouse. *Hicoria ovata* (shell bark) was taken from almost every pit where the shells were found. Some of the perfect, charred nuts were found in the bottom of pits associated with corn and beans, but the ashes thrown into the pits from their fire-places usually contained many charred shells of this nut.

Hicoria minima (Bitter-nut) and *Hicoria laciniosa* were also found in the ashes, but were not so plentiful as the shell bark.

³Explorations of the Gartner Mound and Village Site, Vol. XIII.



FIG. 6—POTTERY FRAGMENTS SHOWING DECORATIONS AND HANDLES

Butternuts (*Juglans cinera*) and Walnuts (*Juglans nigra*) were both found in the perfect charred state in the storehouses and the ashes from the fire-places contained many shells.

Papaw seed (*Asimina triloba*) and Hazelnut (*Corylus americana*) were also found in the bottom of the storehouse.

Chestnut (*Castanea dentata*) found in small quantities in various parts of the village.

Wild Red Plum (*Prunus americanus*)—The seeds were found in the ashes and the charred remains of the fruit with seed were taken from one of the storehouses.

Wild Grape (*Vitis (op)*) was found sparingly in a few of the pits.

PREPARATION OF FOOD

Food, for the most part, both animal and vegetable, was prepared by cooking, as evidenced by the large fireplaces, the innumerable pieces



FIG. 7—SKULL TAKEN FROM ONE OF THE BURIALS IN THE VILLAGE

of broken pottery, and the mortars and stone pestles used in crushing the corn, dried meats, fruits and berries. The fireplace was always present within the tepee, and several of them could always be found outside of the tepee and in close proximity to it. The fireplaces often show repair. When the hollow in the ground became too deep by long use it was filled up to the proper depth by mud plaster. The necessary precautions were not taken to remove all the ashes from the fire place before the plaster was applied, consequently when the fire was again placed in the fireplace it soon cracked loose, and portions of burned clay were removed with the ashes from time to time as the fireplaces were cleaned, and the ashes with the broken lining were thrown into the pits. Large stone mortars were found in every section of the Village, and were made from slabs of fine-grained sandstone, averaging in size from 10 to 15 in. in length, from 7 to 12 in. wide, and from 4 to 7 in. in thickness, with a depression on one side, in many cases only about 1 in. deep, while in others the depression would be several inches. The stone pestles used in crushing corn and preparing food to be cooked, were not selected with any great care nor was very much labor expended in their manufacture, as many of them were merely natural pebbles, suitable as to size and weight, slightly changed by a little pecking or rubbing, while others were natural flat and rounded pebbles, having a small depression cut on each side. None of the bell-shaped pestles found at the Gartner Village were found at the Baum Village, although the preparation of food products was the same.

The use of pottery in the preparation of food was universal. Everywhere in the village fragments of broken vessels were found. Around the fireplaces both in and out of the tepee, pottery fragments were always present, showing that the pottery was broken while being used as



FIG. 8—FAMILY BURIAL GROUND; FOUR ADULTS AND THREE CHILDREN EXPOSED AT ONE TIME, AS WELL AS ONE OF THE UNDERGROUND STOREHOUSES

a cooking utensil. The large pieces were gathered up and thrown into the open refuse pits near at hand, and here we find them quite often with particles of the charred food clinging to the sides of the broken vessels. The potter's art seems to have been known and practiced by each family group. They became expert in successfully tempering clay to strengthen it, and in then carrying it through all the stages of modeling, ornamenting, drying, and at last burning.

Implements: The implements used in the chase and for domestic and agricultural purposes were found in great numbers in the abandoned storehouses and the sites of the tepees. For the most part they were made from bone and horn, but implements made from flint and granitic boulders were in evidence in all sections of the village. The implements used for agricultural purposes and for excavating for the storehouses were made for the most part of large mussel shells. Implements made of wood were no doubt largely used, as charred remains of digging sticks and pieces of wood that had been polished were frequently met with.

METHOD OF BURIAL IN THE VILLAGE

The manner of burying the dead, as shown in Fig. 2⁴ may be considered as the typical method of the Baum Village. Each family group had its own private burial ground, and it was very close to the tepee. In several instances the graves were less than 3 ft. from the tepee site and seldom would the graves be more than 10 ft. away. In close proximity to the mound the family groups were quite near each other, and the family burial ground so restricted that the dead would necessarily be buried close together, and the subterranean storehouses would be dug near the burial grounds. This condition is shown in Fig. 8 where three children and 4 adults were exposed and photographed together with one of the largest storehouses found in the village. Three more children were found to the right of those shown in the photograph, making 10 in this family group, 4 adults and 6 children. The tepee site was to the left of the burials and so close that the head of the adult to the left was very much less than 3 ft. from the post molds which show the outline of the tepee. While no pottery was placed in the graves of this group, the fragments show perhaps the most elaborate decorations and the remains of the largest vessel found in the village. The subterranean storehouses were also unusually large and the contents were very rich in animal remains and implements and ornaments of various kinds. In another group the burials were in a circle around two sides of the tepee.

For the most part the bodies were placed in the grave with a perishable covering, though 3 graves were exhumed which were covered with slabs of slate. The covered graves pertained to 3 different families, and each was in close proximity to other graves. Fig. 9 shows a covered grave of an adolescent; on the left is an adult and

⁴See Vol. V, October issue, p. 306.

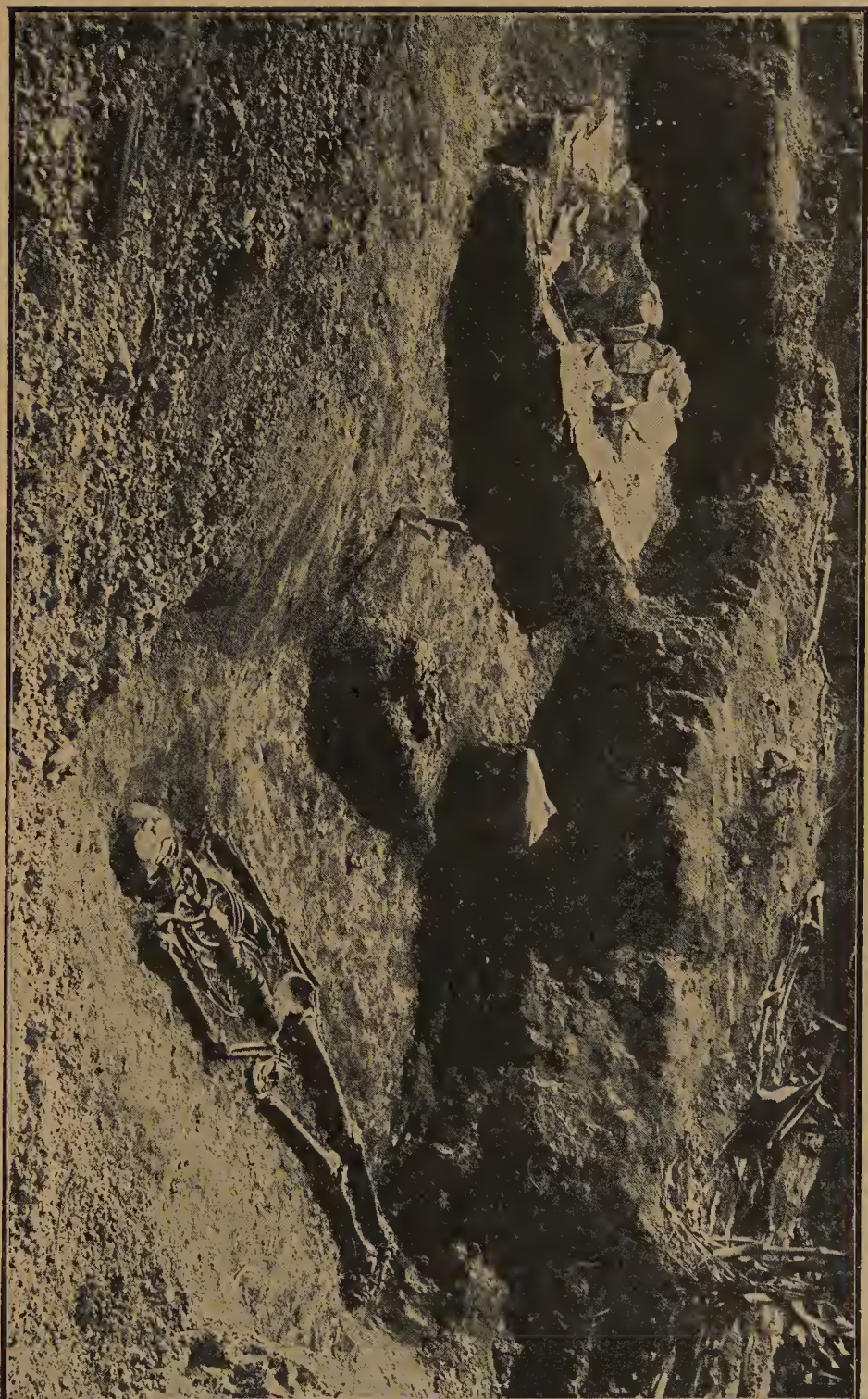


FIG. 9—COVERED AND OPEN GRAVES IN THE SAME BURIAL GROUND

between the two is a skeleton of a very small child. The adolescent's grave, as is shown by the photograph, was carefully covered with the slabs of slate, showing more than ordinary care for the dead. The 3 covered graves contained 2 adolescents, and 1 child. Another form of burial occasionally met with in the family groups was where the interment was made in one of the abandoned storehouses. During the entire exploration only 4 skeletons were taken from the bottom of refuse pits, showing that perhaps the burials were emergency burials, the death occurring during the winter when the ground was frozen, making it a very difficult task to excavate the frozen earth with the primitive digging implements. However, the pit burials may have been only temporary burials, and the re-interment would take place when conditions were favorable for making the proper excavations. In two of the burials in the pits the indications point to a permanent burial after the bodies had been placed in the pits, which were quite deep. The clay forming the sides of the pit was used to cover the body to the depth of 4 inches, and afterwards the pit was filled with refuse the same as other pits in the village. The other two burials had been placed in the pits after they had been about one-fourth filled with refuse, and the bodies were covered with ashes to the depth of 3 inches, and the pits afterwards filled with refuse. These two may have been temporary burials and left by accident in the pits.

The inhabitants of Baum Village, according to the measurements, would average for adult males about 5 ft. 7½ in. in height and adult females 5 ft. 4 in., only one man being found that would measure 6 ft. The bones of the skeleton are perfect, and are large in proportion to the height of the individual. He died before reaching the age of 30 years. Several skeletons of adult males found in the village have strong, heavy and perfect bones and prominent muscular attachment, indicating that they were strong and muscular, and lived to a ripe old age.

Out of 49 tepee sites explored, 10 had no burials surrounding them, and only a few storehouses, showing that the tepee had not been occupied for any great period. All the burials in the entire village were practically the same, being placed in a grave with their implements and ornaments, unattended by any ceremony of fire.

As I have stated elsewhere in this paper, 58 per cent of the children never reached the adult age. I also made an estimate from my field notes of the 53 adults and find that 92 per cent died before reaching the age of 50, and that 56 per cent died before reaching the age of 30. I also found that 21 skeletons of the 127 exhumed had diseased bones, and I requested Mr. S. T. Orton, then a student of the Ohio State University preparatory to his course in medicine and one of my assistants in the field, to take up the study of the diseased bones when the proper time came. Accordingly, after finishing his scientific course at the Ohio State University, he entered the Medical Department of the University of Pennsylvania and devoted much of his

spare time for 3 years to the microscopical study of the diseased bones procured from the graves of the Baum Village Site, and in April, 1905, published in the *Medical Bulletin of the University of Pennsylvania* the results of his investigation in a paper entitled *A Study of the Pathological Changes in Some Mound-Builders' Bones from the Ohio Valley, With Especial Reference to Syphilis*, and I quote from his report:

DR. ORTON'S CONCLUSIONS

"The material under examination is from a source undoubtedly pre-Columbian and the lesions are such as to justify the diagnosis of syphilis by the following pathological evidence: Changes affecting chiefly the diaphyses where long bones are concerned, showing a predilection for those bones which are most exposed to trauma, consisting of large exostoses and osteophytic overgrowths, and characterized by the concurrent presence in the same specimen of both a rarefying and condensing osteitis as demonstrated by gross and microscopic examination. Of 127 skeletons from one series of excavations, 21 showed traces of disease, 60 per cent of the affected showed the changes most upon the tibia with the ulna, cranium, and sternum following in order. Of the specimens examined rarefying osteitis was grossly manifest in all but two, one of which (ankylosed metatarsal and cuneiform) was probably of traumatic or septic nature, and the other (a clavicle) was not examined in cross-section. Grossly sclerosis was evident in 3 of the 10, while on microscopic examination only 1 of 6 from which sections were taken failed to show condensation in some areas."

HOME LIFE

The explorations of the Baum Village site have brought to light many points of interest concerning the home life of a prehistoric people who had risen above the level of mere children of the forest, depending upon wild wood for their subsistence. They had established homes, a developed agriculture, and had collected and provided storage for food supplies for future use. Therefore the Baum Village site culture in all essential points resembles the culture of the Gartner Village site along the Scioto, and the Ft. Ancient and other culture sites along the Miami; establishing the fact that at one time the valleys of southern and central Ohio were peopled by a culture which was quite uniform throughout the entire section, and for convenience I have termed these early inhabitants the Ft. Ancient Culture. The manufacture of their implements, such as scrapers, awls, needles and fish-hooks, as well as the many implements in stone, as shown by the various stages in the manufacture of these implements, was in every respect similar throughout the entire region. In the manufacture of their pottery, and especially in regard to their designs and shapes, they were quite similar, and it would be impossible to distinguish the Ft. Ancient pottery from the Baum, and the Baum from the Gartner Village Site pottery. In the same valleys occupied by the Ft. Ancient

Culture we find evidence of a higher culture, and for my convenience I have designated this culture the Hopewell Culture, taking the articles secured by Prof. Moorehead from the Hopewell Mounds as the type. The Ft. Ancient Culture occupied portions of the valleys which were later occupied by the Hopewell Culture, as was evidenced by the results of the explorations of the Harness Mound group during the summer of 1905. After completing the explorations of the Harness' Mound, the articles taken therefrom being of the higher culture, I examined a mound located outside of the great circle and not far distant from the Harness Group, directly to the south, and found this mound to be a burial mound of the Ft. Ancient Culture. At the center of the mound, and a few feet under the surface, was found an intrusive cremated burial, similar in every respect to the cremated burials of the Harness Mound. The artifacts of the Hopewell Culture can in almost every object used in common by the two cultures be readily distinguished from those of the Ft. Ancient Culture by the portrayal of the esthetic ideas of the artisan.

CONCLUSION

My conclusions are, that the builders of the Baum Mound were isochronological with the dwellers in the Baum Village, for in all the sites of the Ft. Ancient Culture examined, the inhabitants had an inter-tribal trade, as evidenced by the copper, ocean shells and mica there found; that the dwellers in this village were pre-Columbian, as no objects showing European contact were met with and the village was occupied by the same culture in all its parts.

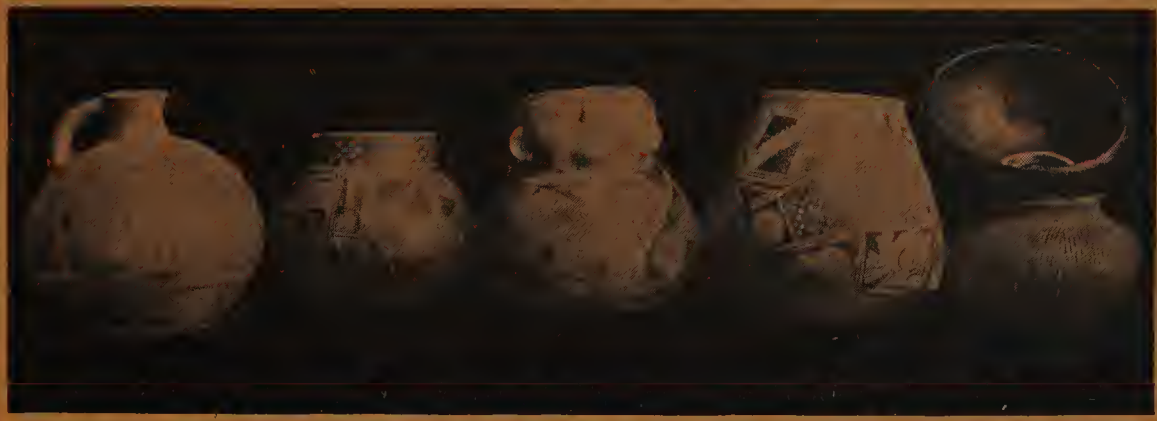
WILLIAM C. MILLS,

Curator, Ohio State Archæological and Historical Society.



SUN-TEMPLE AT ABUSIR.—M. Maspero observes that the Sun-Temple at Abusir, according to the researches of Baron von Bissing and Dr. Borchardt must have resembled a Babylonian "Zigurat" and that Egyptian towns of the Memphite period must have been very like the Babylonian buildings of the same period as in the case of Ur of the Chaldees.

BABYLONIAN INCANTATION TABLET.—Mr. Vincent Brummer has translated a Babylonian Incantation Tablet which he considers as old as 3500 B. C. It differs from other Incantation tablets by being written in Sumerian and not Assyrian, and in a very archaic script. This confirms the theory that Assurbanipal's spells were not original, but copies and translations of documents in use thousands of years earlier. Mr. Brummer further states that the Sumerian title *E-nu-shub* does not mean "incantation of the house of light" but "incantation of the house not exorcised," implying that the house being already absolutely pure did not need purification.



RECORDS OF THE PAST

VOLUME V

DECEMBER, 1906

PART XII



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DECEMBER, 1906

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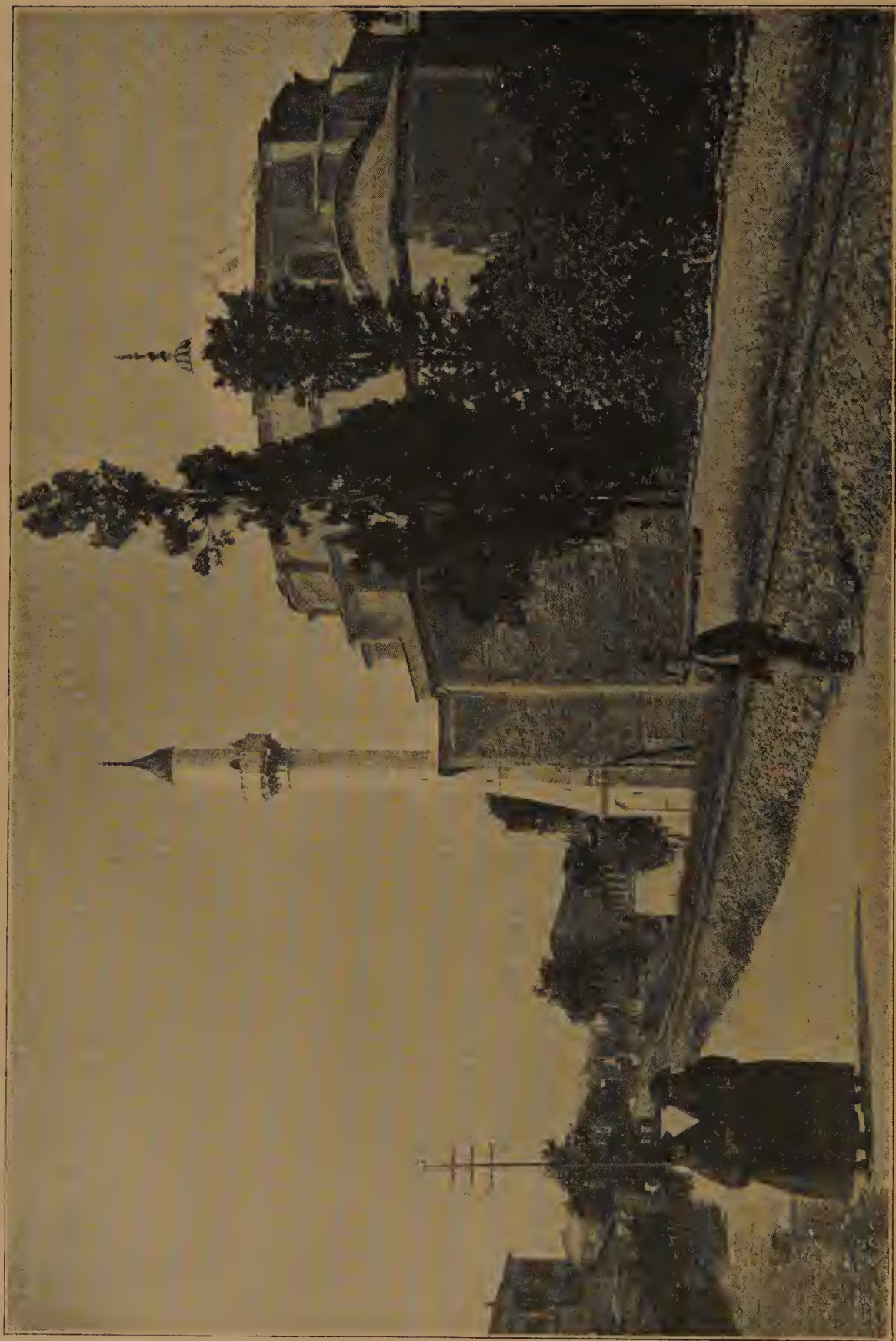
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EXTERIOR OF SS. SERGIUS AND BACCHUS AT CONSTANTINOPLE

RECORDS ^{OF} THE PAST

VOL. V



PART XII

DECEMBER, 1906



THE DOME OF SS. SERGIUS AND BACCHUS AT CONSTANTINOPLE

NOT far from the great mosque of Hagia Sophia but nearer the shore of the Sea of Marmora is a small mosque, known to-day as the Kutchuk-aya-Sofia or the Little Hagia Sophia.

Historians of architecture have heralded it as the prototype of Hagia Sophia in Constantinople and of S. Vitale in Ravenna. Some have pointed to it as furnishing the earliest European example of a dome poised upon a polygonal base by means of pendentives—a method of domical construction which has prevailed not only in Constantinople and in Western Europe but wherever Byzantine influence has reached, from the VI century to the present day. Others more impressed by the melon-shaped form of the dome have proclaimed it as the prototype of the many strange forms of domes which subsequently appeared in various countries of Europe and Asia. So it is worth our while to obtain, if possible, a clear notion of the construction and form of this influential building.

The building in its present condition has lost much of its ancient character through Turkish restoration, but our knowledge of it has suffered even more through misrepresentation by historians of architecture. Its very name has become obscured. An inscription in the building itself tells us that the Emperor Justinian dedicated it to the

martyr Sergius;¹ whereas Procopius² speaks of it as the church of SS. Sergius and Bacchus. Alongside of it was a church of basilican plan, and these two churches—one a building of circular construction, the other a basilica—had a common narthex and opened into a single court. Procopius also mentions in the same connection the church dedicated to SS. Peter and Paul. Later writers have been somewhat at a loss whether to name the circular church S. Sergius and the basilica S. Bacchus, or to assign the former to SS. Sergius and Bacchus and the latter to SS. Peter and Paul. For our purposes the decision of this question is insignificant, as we are concerned only with form of the domical church.

Its ground plan was misrepresented in 1852 by Lenoir,³ who gave to it a French apse, circular upon the exterior as well as on the interior. His error was perpetuated by James Fergusson⁴ and by Sir Gilbert Stuart.⁵

In 1854 W. Salzenberg⁶ corrected the form of the apse, but perpetuated Lenoir's error by giving to the plan a symmetrical character. This symmetrical plan of Salzenberg's has been republished many times during the last 50 years. It was republished in Germany by Kugler,⁷ Hübsch,⁸ Schnaase,⁹ Lübke,¹⁰ Essenwein,¹¹ Reber,¹² Kraus,¹³ Borrmann & Neuwirth,¹⁴ and others; in France by Gosset,¹⁵ and by Choisy;¹⁶ in the United States by Clarke in his translation of Reber's *Mediaeval Art*.

That the plan of the church was not symmetrical, but deviated considerably from absolute regularity, is evident from the apparently very careful plan published by the architect, D. Pulgher.¹⁷ This plan has been published by Adamy,¹⁸ Dehio and Bezold,¹⁹ Holtzinger²⁰ and Lowrie.²¹

So far as we may judge from a photographic reproduction of the

¹Salzenberg, *Altchristliche Baudenkmale von Constantinopel*, p. 43.

²Procopius, *De Ædificiis*, I, 4.

³Lenoir, *Architecture Monastique*. P. 257. Paris 1852.

⁴Fergusson, *Hist. of Architecture* 2 ed. Vol. II; p. 442. London 1874.

⁵Gilbert Stuart, *Lectures on the Rise and Development of Mediaeval Architecture*. Vol. II; p. 248. London, 1879.

⁶W. Salzenberg, *Altchristliche Baudenkmale von Constantinopel*, Bl. V. Berlin 1854.

⁷Franz Kugler, *Geschichte der Baukunst* I, p. 421. Stuttgart 1859.

⁸H. Hübsch, *Die Altchristlichen Kirchen nach den Baudenkmalen und alteren Beschreibungen*. Taf. 32. Karlsruhe 1863.

⁹C. Schnaase, *Geschichte der Bildenden Künste*, III, p. 151. Stuttgart 1869.

¹⁰W. Lübke, *Geschichte der Architektur*, p. 267, 5 Aufl. Leipzig 1875.

¹¹Essenwein, *Die Ausgänge der klassischen Baukunst*, p. 110. Darmstadt 1886.

¹²Reber, *History of Mediaeval Art*, p. 56. Trans. by J. T. Clarke, New York, 1886.

¹³Kraus, *Geschichte der christlichen Kunst*, I, p. 361. Freiberg in B. 1896.

¹⁴Borrmann & Neuwirth, *Geschichte der Baukunst*, II, p. 54. Leipzig 1904.

¹⁵A. Gosset, *Les Coupoles*, pl. 2. Paris, 1889.

¹⁶A. Choisy, *L'Art de Batir chez les Byzantins*, pl. XX. Paris, 1883.

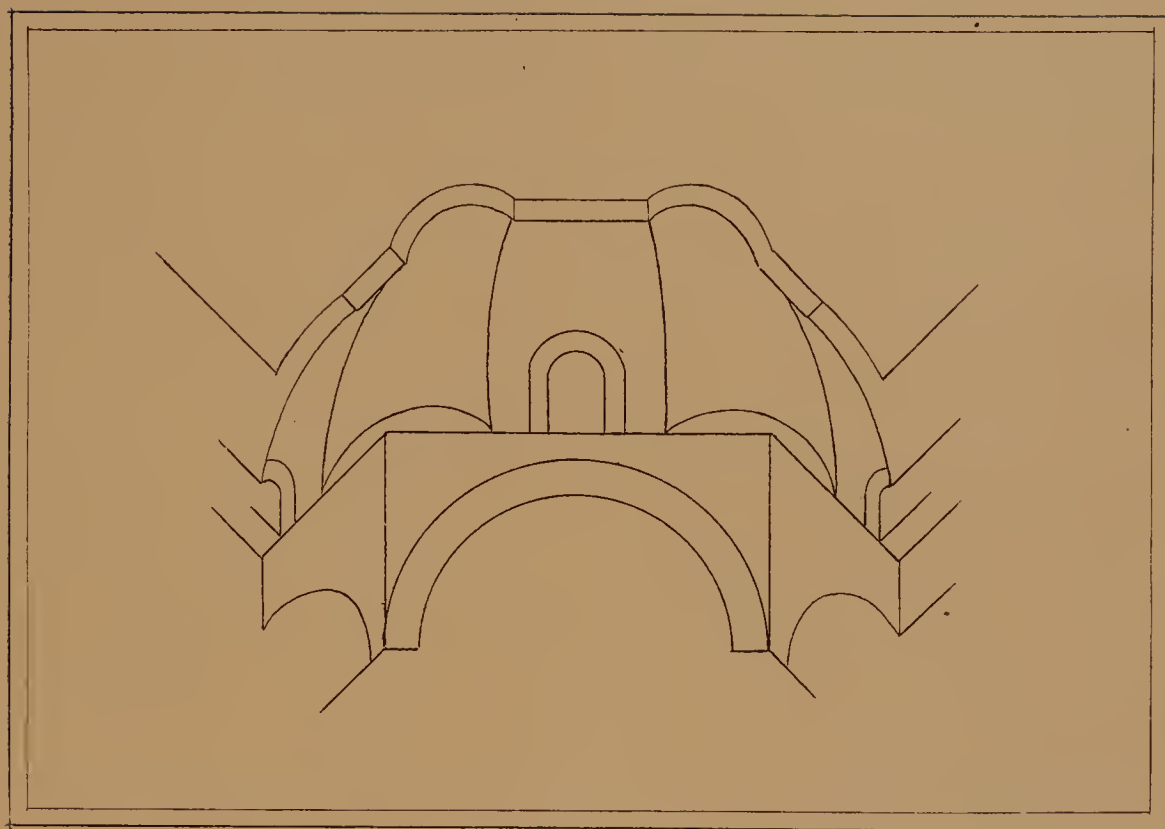
¹⁷D. Pulgher, *Les anciennes églises byzantines de Constantinople*, Pl. 3. Vienna 1878-80.

¹⁸R. Adamy, *Architektonik der altchristlichen Zeit*, p. 112. Hannover 1884.

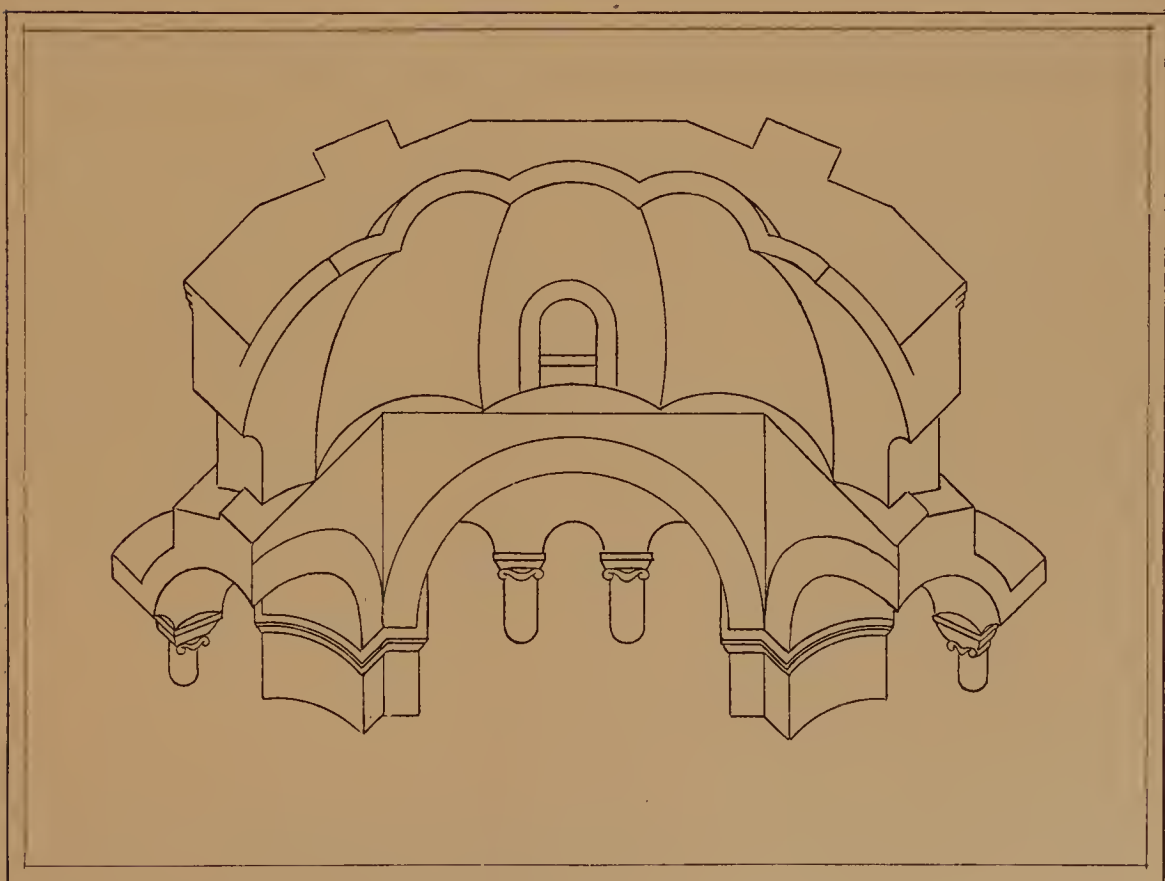
¹⁹G. Dehio & Bezold, G. von, *Die kirchliche Baukunst des Abendlandes*, I Taf. 4. Stuttgart 1887.

²⁰H. Holtzinger, *Die altchristliche Architektur*, p. 101. Stuttgart 1889.

²¹W. Lowrie, *Monuments of the Early Church*, p. 145. New York 1901.



THE DOME ACCORDING TO LETHABY



THE DOME ACCORDING TO CHOISY

exterior published by Rivoira²² neither Salzenberg's nor Pulgher's plan is absolutely correct, although in general we may presume that Pulgher would not have intentionally given the irregular and unsymmetrical rendering unless he had actually observed this character in the building itself.

When we turn from the plan to consider the construction and form of the dome the testimony of our witnesses is still more disturbing.

The first question that demands our attention is: Does or does not this first of Justinian's churches exhibit the characteristic Byzantine pendentive? Salzenberg, whose splendid publication has proved so influential, describes the dome as resting upon 8 piers, and states that the transition from this octagonal base to a circular base for the dome is effected by means of 8 pendentives.²³ He accordingly produces an elevation showing 8 pendentives, and this is reproduced by Kugler, Schnaase, Hübsch, Essenwein, Kraus, and Adamy.

Pulgher's elevation differs in some respects from that of Salzenberg, but agrees with it in the representation of the 8 pendentives. This elevation has been republished in the important work of Dehio and Bezold.

With such an array of authorities declaring in favor of pendentives it is easy to see how so careful a writer as Rudolf Adamy should cite this building as offering the first example of the spherical triangular pendentive.²⁴ More recently, however, pendentives of earlier date by several centuries have been discovered in Syria and also in Italy.

Quite a different view was presented in 1883 by Auguste Choisy.²⁵ He represents the dome as consisting of 16 compartments, all concave to the interior, which rest upon the octagonal base without the intervention of pendentives. His elevation was republished by A. Gosset²⁶ in 1889.

In a recent book on *Mediaeval Art* by W. R. Lethaby²⁷ we find it expressly declared that this dome is "not set on regular pendentives," and this declaration is supported by the photograph published by Rivoira²⁸ in 1901.

These imaginary pendentives have been multiplied by some writers, being transferred to the 16-celled dome above the octagon. Thus Hübsch²⁹ declares that the dome is set on 16 pendentives and Sir Gilbert Stuart³⁰ falls into the same error. Neither in the dome above nor in the octagon below are there any pendentives whatever.

²²Rivoira, *Le Origine della Architettura lombarda*, I, p. 74.

²³Salzenberg, *op. cit.* p. 43.

²⁴Rudolf Adamy, *op. cit.* p. 114.

²⁵Auguste Choisy, *op. cit.* pl. XX.

²⁶A. Gosset, *op. cit.* p. 81.

²⁷W. R. Lethaby, *Mediaeval Art*, p. 44. London & New York, 1904.

²⁸Rivoira, *op. cit.* p. 343.

²⁹Hübsch, *op. cit.* p. 73.

³⁰Stuart, *op. cit.* p. 248.



INTERIOR OF SS. SERGIUS AND BACCHUS

FORM OF THE DOME

It would seem as if the general form of a dome might be easily described, but very great differences of opinion have prevailed regarding the form of the dome of this church. Lenoir, who had given a French character to the apse, pictures the dome³¹ as a polygonal dome of 8 compartments separated by rectangular ribs.

³¹Lenoir. *op. cit.* p. 321.

This representation of the dome of SS. Sergius and Bacchus as a mediæval French cloistered dome has found its way into Germany, being republished by Holtzinger,³² and into England through the publications of James Fergusson³³ and Sir Gilbert Stuart.³⁴

Lenoir's illustration contains no suggestion of window openings and no indication of a drum. Choisy, Gosset and Lethaby all indicate the windows, but their drawings imply a uniformly curved dome reposing directly upon the octagonal base.

If, however, we turn to the elevations presented by Pulgher or by Salzenberg and his followers, we shall find the dome resting upon a very distinct drum; according to Pulgher, a polygonal prism of 16 vertical sides; according to Salzenberg a modified prism composed of 8 vertical sides alternating with 8 niches.

The testimony of the photograph published by Rivoira indicates a distinct break in the curvature between the cupola and its drum.

Now let us examine the form of the cupola itself.

On the exterior many of the illustrations would lead us to believe that it was hemispherical. Even Rivoira³⁵ rather vaguely describes it as "a superficie sferica ondulata." Its true form seems to have been recognized by Salzenberg, who describes it³⁶ as having "das Ansehen einer gerippten Melone." Similarly Choisy³⁷ describes and pictures it as "découpée en feston dans une surface conique." On the whole, then, our authorities are agreed that on the exterior the dome has the form of a melon.

But what is the appearance of the dome on its inner surface? Here we meet again great difference of opinion. Hübsch³⁸ describes the dome as having a polygonal base of 16 sides, and pictures it as a 16-sided cloistered dome poised by means of 16 small pendentives upon a 16-sided prismatic drum. In this view he appears to have had no followers.

But Salzenberg and his many followers, Pulgher and his successors, Choisy and his follower Gosset, and recently Rivoira, all agree that the 16 compartments are concave on the interior, corresponding to the 16 convex divisions on the exterior. These writers differ from each other in describing how these 16 compartments are constructed.

Salzenberg's³⁹ description of the dome as constructed of "sechzehn Rippen und ebensoviel Kappen" conveys an erroneous impression, inasmuch as the ribs seem to be as Lethaby⁴⁰ describes them, merely "modeled plastered ribs," which mark the 16 divisions of the dome.

³²Holtzinger, *op. cit.* p. 101.

³³Fergusson, *op. cit.* p. 442.

³⁴Sir G. Stuart, *op. cit.* p. 248.

³⁵Rivoira, *op. cit.* p. 76.

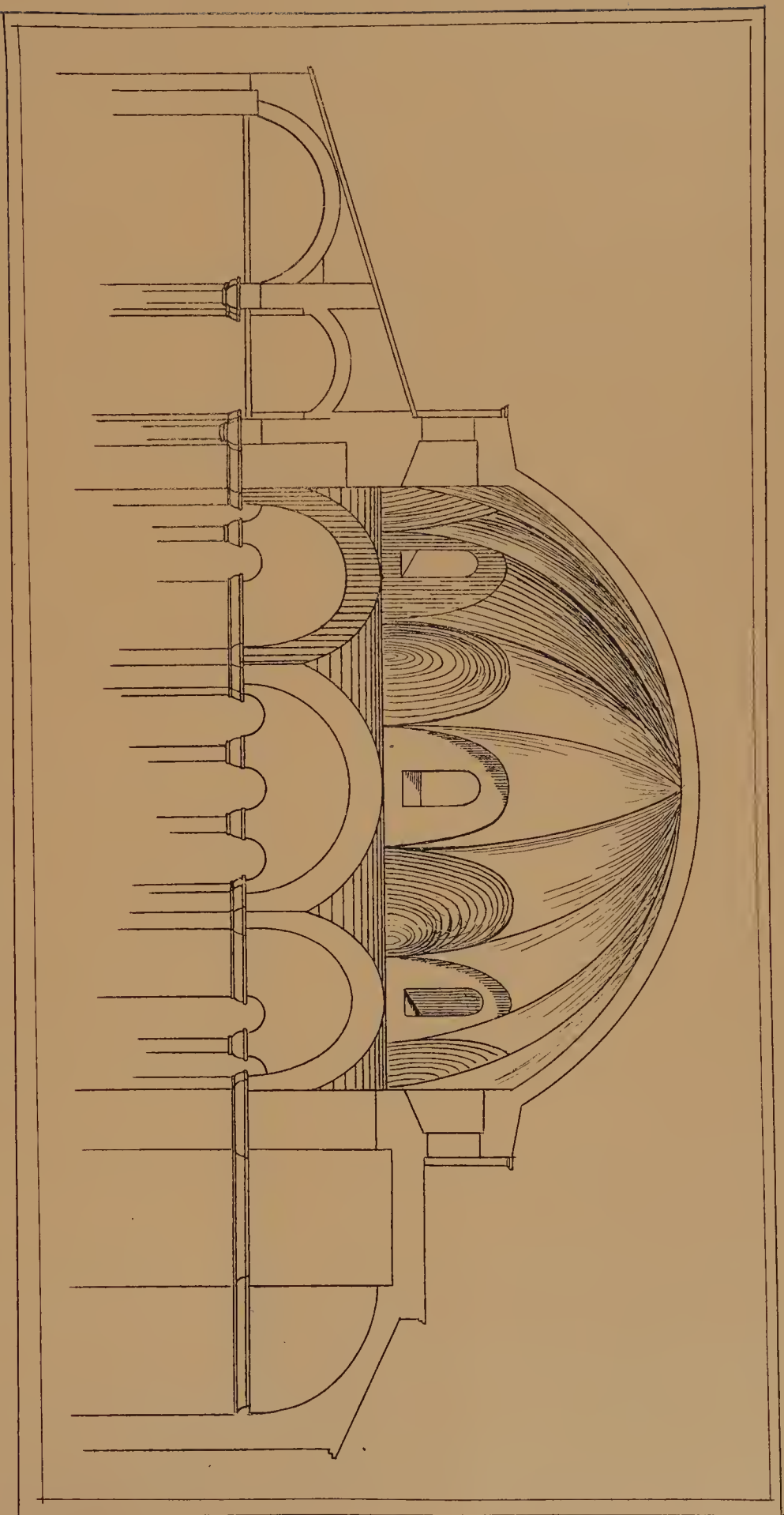
³⁶Salzenberg, *op. cit.* p. 43.

³⁷Choisy, *op. cit.* p. 68.

³⁸Hübsch, *op. cit.* p. 73.

³⁹Salzenberg, *op. cit.*

⁴⁰Lethaby, *op. cit.* p. 44.



THE DOME OF SS. SERGIUS AND BACCHUS ACCORDING TO SAIZENBERG

The dome is not constructed of "Rippen und Kappen" like a Gothic vault, but is more like a Romanesque vault in which the vaulted compartments terminate in sharp arrises. These arrises have no carrying function, although they may act as Choisy⁴¹ says, "comme des nervures qui rendent la coupole moins deformable."

There remains still another description of the inner surface of the dome—that given by Lethaby.⁴² According to this writer the dome is not a polygonal cloistered dome, as Hübsch describes it, nor is it a melon with 16 curved compartments, as described by Salzenberg and Pulgher and Choisy, but the 16 compartments present two forms; those above the windows, and the principal arches of the octagon, rise like the panels of a polygonal cloistered dome, while those above the angles of the octagon are recessed and concave. A cross section of such a dome would therefore be a polygon of which 8 alternate sides are rectilinear and the remainder segments of circles concave to the interior.

Unfortunately, the photographic evidence before us is insufficient to prove or disprove this latest description.

It seems, however, unlikely that this rhythmic alternation of forms would appear on the interior of a dome composed of all convex segments on the exterior, as in this case every alternate panel would have to be filled in on the interior, or at least covered by a plaster shell at some distance from the actual vaults of the dome.

Either expedient would be faulty construction, and if it exists at all is more likely to belong to the Turkish restoration than to the original dome. Unfortunately photographic evidence is insufficient to define accurately the form of the dome, and even a personal inspection might fail to solve the problem, unless some of the modern plastering should be removed.

In reviewing such conflicting testimony as we have before us it is not easy to satisfy ourselves as to the true form of this dome, although it seems probable that Choisy's description is the most accurate. His drawing suggests in the melon-shaped dome a rhythmic sequence of slightly and of deeply-niched sections. Structurally such a form is more practical and more likely to have occurred than that given by Lethaby.

ALLAN MARQUAND.

Princeton University.



CARE OF ANCIENT MONUMENTS.—In emphasizing the necessity of awakening popular public interest in the preservation of ancient monuments and relics Prof. G. Baldwin Brown of the University of Edinburgh says: they "are heirlooms from the past and appeal to the piety and patriotism of the present. * * * As the decay or destruction of any one of them involves an increase of value in those that endure, so the care of them will become every year a matter of more and more urgent duty."

⁴¹Choisy, *op. cit.* p. 68.

⁴²Lethaby, *op. cit.* pp. 43-44.

ANCIENT AMERICAN "FREE DELIVERY"

ARCHAEOLOGICAL research reveals many important details of the domestic economy of ancient times, but practically nothing that indicates the character or even the existence of what are to-day regarded as vital branches of an adequate public service. Perhaps there were no such branches in those times, and perhaps there were many of which we have no inkling, because they were organized, like an afternoon reception, in such form that they could and actually did disappear without leaving palpable traces behind.

While, therefore, the absence of material remains proves little or nothing conclusively, if excavators uncover no indications of the existence of a common postal system, and we can find nothing in the laws, history or traditions of ancient peoples referring to such a system, we shall run small risk in concluding that it was unknown to them.

In the September issue of *RECORDS OF THE PAST*, under the title of *Post System in Ptolemaic Egypt*, appears a paragraph stating that "a document has been found at Oxyrhynchus which is evidently the record of the local postman, in which he states that he has delivered, among other things, one roll of papyrus for the king, one roll for Antiochus the Cretan and two letters for Appolonius the dioectes."

Throughout all recorded time kings, generals and great personages have delivered messages, decrees, sentences, pardons, presents, etc., by couriers; but there is nothing, so far as I know, to warrant the belief that a system of general mail delivery was known to ancient China, Syria, India, Babylonia, Asia Minor, Egypt or even Greece and Rome.

The general delivery of private information from house to house, theoretically at public expense and actually under government regulation, is supposed to have been unknown to the ancients of all periods; but I can state that one of the most effective, as well as one of the most interesting systems of "rural free delivery" ever conceived was in use for untold generations by the Indians of the north shore of Lake Superior, especially the Pillagers, and, I suppose (prior to the demoralization wrought by the advent of the Caucasian) by the Indians of other localities.

Suppose, for illustration, that it is time to "tie rice." Shall I interject here an explanation of what that means? Yes? Very well. Wild rice grows in shoal water, the heads, which resemble very long, slim heads of barbed wheat, maturing 1 or 2 and sometimes 3 or 4 feet above the surface. If nothing were done to prevent it, the winds, which blow high and steady from the north in the Lake Superior

region during autumn, would whip the rice grains out into the water, where they would be lost. In order to prevent this waste of a very important article of food, the Indians pass through the rice lakes with their canoes abreast like a platoon of soldiers, while the berry is "in the milk," and, gathering the standing stalks into sheaves, tie them securely just above the water either with thongs of cedar root bark or a few tough strands of the rice straw itself.

With its tops thus bound together, making a living sheaf shaped like a cone, the rice matures without suffering any waste from the whipping north wind. When the grain is fully ripe the Indians return and, bending the sheaves over the sides of their canoes, beat the kernels into their boats. Each canoist continues threshing until his craft has been filled over his legs and around his body, and then all hands return to camp.

Returning now to an illustration of the working of the ancient Pillager free delivery system: The king or chief (not the war chief) has learned that it is time to tie rice, and issues an order that all of those whose duty requires them to do so shall proceed at once to the rice lakes. I am one of those who must obey, but I receive the command while 30 miles from home. Therefore, as I can not spare the time to notify my family in person, I deposit in the nearest post-office on the trail a piece of wood or bone or bark, on which I have made the hieroglyphic statement that I must be absent a half-moon tying rice. These ancient post-offices consist of sheltered crevices in the rocks, holes under the roots or stumps of trees and hollow trees. The French called them caches.

Under the tribal law every person who travels over the trail must examine the contents of each post-office that he passes for the purpose of forwarding any messages which are deliverable in the direction that he is pursuing. If the first person who passes the cache or post-office in which I have deposited my letter knows my family or where they live, and expects to see them, he must take the message to them. If he intends to go only a portion of the way, he copies my message, leaves the original as he found it, and deposits his copy in the last post-office that he passes on his journey toward my wigwam.

If another person comes into the trail on the hither side of this copy, he must repeat the operation described, delivering the copy to my family or his own copy into the last cache on the road he travels in their direction.

Thus my family are certain to receive my message in a short time, for Indian laws, where the poisonous influence of the whites is unknown, are never disobeyed.

I asked the civil chief of the Pillagers, how long his people had used this beautiful and effective free delivery system, and he replied, "Always."

As the Pillagers claim to be the aboriginal natives of the soil where the remnant of their tribe is now located, and as the tepee of

the present hereditary chief overlooks the graves of more than 30 generations of his ancestors, the term "always," in this case, must mean, at the lowest, many, many centuries. The present hereditary chief claims that his family have ruled the Lake Superior tribe in the seat where they are now found between 18 and 20 centuries.

FRANK ABIAL FLOWER.

Washington, D. C.



MOUND BUILDERS OF THE MISSISSIPPI VALLEY

IN SPEAKING of the Conical Mounds as being individual and family burial places, especially in that the Chiefs were buried on the most prominent cliffs, commanding the widest range of view; it occurs to me that these points were first used by them as lookouts, watching over and guarding their people, who were lodged all around below; that the Chief's Tepee was erected there and occupied by him and his family, during his lifetime, and at his death he was buried, with all his belongings within the confines of the place where his Tepee had stood until his death, and thus the place came to be a family burying ground which no one else was allowed to invade. This would seem to account for the many descriptions of burned poles and ashes found in mounds that had been opened. I am further led to believe this from a pictograph painting on some Pueblo Indian pottery in my collection, which together with a description may be interesting enough to reproduce here. This pot shows a village of tents, or tepees, enclosed by a stockade or fence. The tepee with the double fly or opening at the top to let the smoke out, is the Chief's, it being his prerogative, to welcome and accommodate the visiting Chiefs of friendly neighboring tribes;—he must therefore have ample provisions, for "heap big smoke."

The one next to this on the right is that of the sub-chief, medicine man, or next in authority, as is shown by his smoke-fly, being different from any other in the whole camp.

The second lodge on the left is vacant, both former inhabitants having died and been buried in mounds on the inside of the lodge. The ends of this tepee are left open to indicate that it will never be occupied by any other person; while the others that are inhabited have both ends closed except for the place of entrance. The zig-zag border at the top, with the rings and dot in the center shows how many summers and winters they have lived at that village,—from one circle to the other represents one year. These burial mounds which they have left, are silent witnesses of their having once lived here in all their glory, and are rich in antiquities, and speak to us of their material

and personal wealth, as it was a wise custom that when a chief died all his worldly possessions should be buried with him in the same mound, thus avoiding dissention among his own people, as there could be no quarrel among the children and relatives over the division of property, under such circumstances, as is often times the case among our more civilized people;—and they were only simple children of nature.

The pot-sherds found here, in the sand hills at Eagle Point, are some of them of cunning workmanship and of patterns strikingly different from each other.

The question is frequently asked, how can you tell that from any other kind of pottery of recent manufacture? This is comparatively



PUEBLO INDIAN DECORATED POT

easy to an experienced and practiced eye;—modern pottery is smooth and generally has the glazed side on the outside; while the ancient mound builders' pottery is rough and dull finish on the outside and generally burned the hardest on the inside. This is accounted for in this way, their pottery was not turned and smoothed on any kind of turn-table nor burnt in any kind of an oven as is the case with the modern pottery. It was made and fashioned by hand, the inside of the pot being filled with red hot coals from the open fire of a log heap and then set in upon the live coals and thoroughly burnt or baked through in this manner; the smooth inside surface generally showed more of a hard finish than the outside, frequently blackened from the live coals, and if there was any gloss at all it was generally found on the inside. The reason why a considerable amount of pottery and

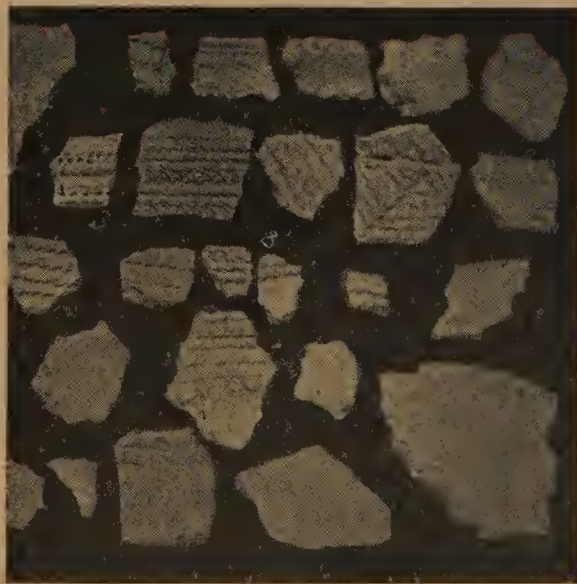
broken pieces of pottery is found in and around these burial mounds, is that it was their custom to bring food and water for some time after the burial in these pots and place them on the mound and in the hut over the mound, and when the saplings or poles of the hut became decayed the heavy weight of sod upon them broke them down, generally breaking the pots to pieces at the same time. For that reason I have never been able to find any whole pots in this immediate neighborhood. But the one from New Albin, Iowa, in my collection, illustrated in the August issue of *RECORDS OF THE PAST*, upper left hand corner page 237 is quite large and pretty for that kind of workmanship.

The finest collection of mound builders pottery in Iowa is to be found in the Academy of Science at Davenport, Iowa.

Another evidence that mound building was practised here by the Indians up to the time that the white people first settled in this part of the country is shown by the following bone implements found in a good state of preservation in a mound near Garner, Wisconsin, on a high cliff a few miles south of Cassville, Wisconsin, by Mr. Charles Pitschuer, Jr. They all came out of one mound, and are principally household utilities—two bone knives and spoons, combined; several awls and perforators for basket making; 4 arrow heads and 2 eagle's claw ornaments, a bone needle with part of the eye intact, and a musical instrument. These would indicate that the interment had been made comparatively recently, probably about the time the white settlers first invaded the west. There are also numerous other shaped mounds hereabouts, mention of which I must defer to another time.

RICHARD HERRMANN.

Dubuque, Iowa.



POTTERY FRAGMENTS FROM MISSISSIPPI MOUNDS



BURIED WALLS WITHIN THE FORTRESS

THE FORTRESS OF MASADA

THE precipitous cliffs of the west shore of the Dead Sea approachable only by water or across a barren desert combine elements which have made fortresses built here almost impregnable. The best preserved of these ancient fortifications is the one at Zaweirah, which stands on a high eminence at the mouth of a deep defile which enters the Dead Sea by Jebel Usdum at the south end of the Sea. The natural strength of its location is clearly shown in the accompanying illustration.

About 15 miles north of Zaweirah is another fortification not so well preserved but of greater historic interest, it being the last fortress held by the Jews after the fall of Jerusalem in A. D. 71. This fortress, called Masada, is situated on a limited plateau nearly 1200 ft. above the Dead Sea. The approach from the sea is too steep for animals to climb and although not dangerous is nevertheless fatiguing.

Josephus describes the situation thus:

"There was a rock, not small in circumference, and very high. It was encompassed with valleys of such vast depth downward, that the eye could not reach their bottoms: they were abrupt and such as no animals could walk upon excepting at two places of the rock, where it subsides so as to afford a passage for ascent though not without difficulty." This ascent from the Dead Sea Josephus calls "the serpent."

Along the shores of the Dead Sea there are still to be seen long rows and numerous inclosures of stone which marked the camp of the Romans during their siege. The approach to the fortress, however, from the east is so steep that no besieging army could attack it from

that direction. On the west there is a more gradual ascent to within a short distance of the fortress. The last part of the ascent, however, was exceedingly steep so that without enormous labor it would have been impossible for an enemy to raise their engines of war so as to have their missiles reach the fortification. Added to these natural advantages is the difficulty of obtaining water for a besieging army, the only abundant supply within reach being at Engedi some 15 miles to the north on the shores of the Dead Sea. As all the region surrounding Masada is barren desert the importance of this location for a fortress of refuge was early recognized.

Jonathan Maccabaeus, the high priest, built the first fortress of which we have any knowledge on this spot. Later King Herod the Great rebuilt it and strengthened it, probably with the intention of



EMBANKMENT THROWN UP BY THE ROMANS

making it a place of safety to which he could flee to escape the fury of the Jews if they should rise against him or possibly as a place of refuge in case he should be deposed by Antony at the request of Cleopatra who desired the control of Palestine.

Whatever may have been the incentive, it is evident that Herod planned this fortress to be secure from assault and provisioned to withstand a protracted siege. So carefully was this done that, according to Josephus, the fruits and provisions laid in by Herod were, after 100 years "fresh and full ripe and no way inferior to such fruits newly laid in." These stores included large quantities of corn, wine, oil, pulse and dates.

Around the summit of this promontory Herod built a wall 7 furlongs long completely surrounding it, 12 cubits high and 8

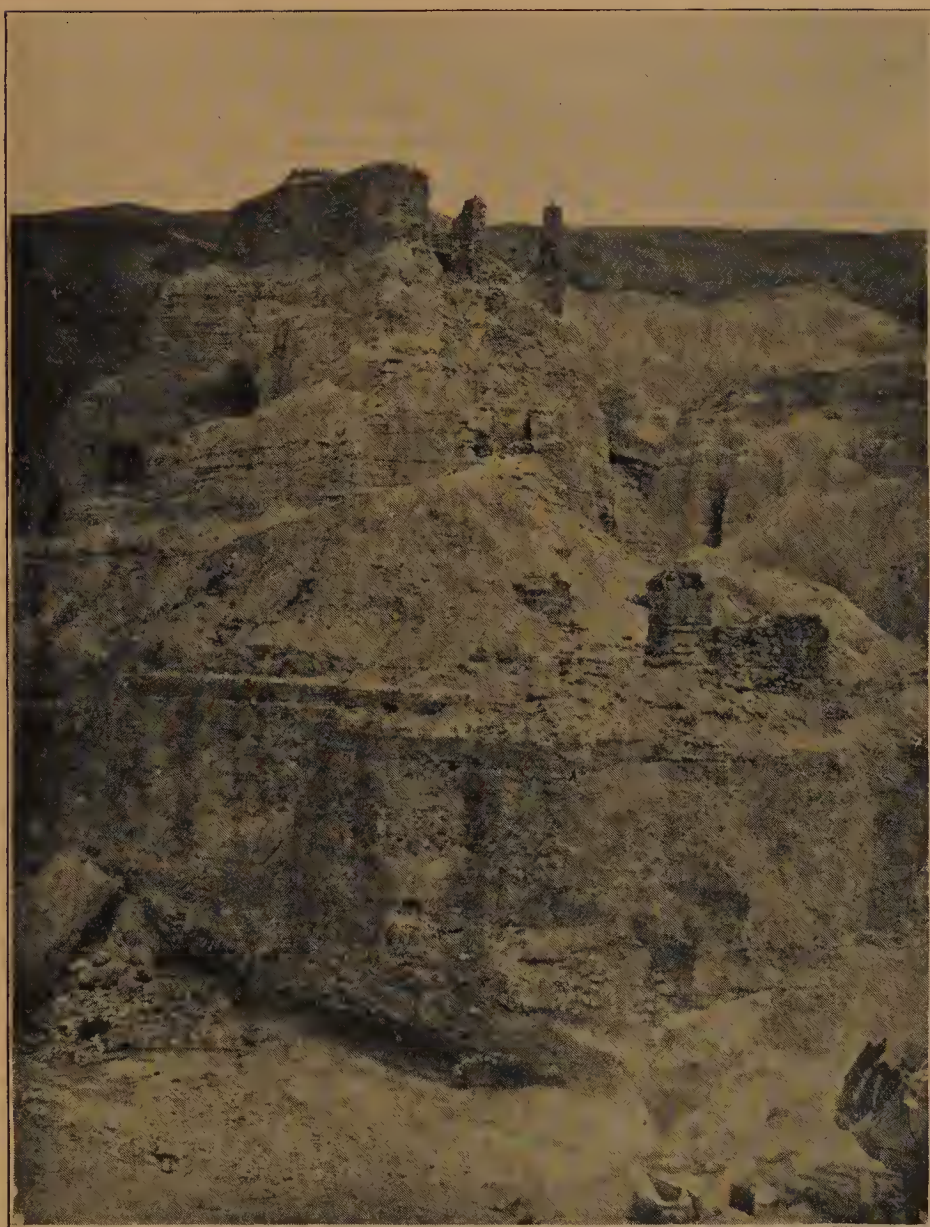
cubits broad with 38 towers erected on it, each of which was 50 cubits high. In the center of the hill a large plot of good soil was reserved for agriculture while large reservoirs for water and store houses for provisions were made. Herod also built him a fine palace with towers at the corners 60 cubits high. He also provided in true Roman style fine baths for his personal use.

As these stores were still intact at the time of the destruction of Jerusalem there could be no more attractive place for a band of practical brigands to seize than Masada. This Eleazar, the head of a band of about 1,000 Sicarii recognized, and by treachery obtained possession of the fortress.

Shortly after the fall of Jerusalem the Romans sent an army under Silvia to besiege and take Masada. According to Josephus, Silvia first built a wall completely around the fortress, a statement which has to be rather liberally interpreted on account of the configuration of the country. However, an extensive system of stone walls, mentioned earlier, surrounded the fortress wherever escape was practicable so as to cut off all possibility of any of the band breaking through the Roman lines. Knowing that it would be impossible to starve the garrison into submission Silvia decided to storm the fortress. In order to do this it was necessary to throw up an enormous embankment on the west side of the fortress over which his enormous engines of war could be brought within striking distance of the walls. . An idea of this gigantic undertaking is shown in the accompanying illustration, the whole ridge having been artificially thrown up by the opposing army. According to Josephus the Romans built a tower 60 cubits high which was covered with iron and from which they could throw darts and stones into the fortification. They also used a battering ram with which they broke down the outer stone wall. But the Sicarii hastily built a second wall of beams and earth, which being more yielding than the stone wall withstood the attacks of the Roman battering ram.

As a last resort the Romans set fire to this wooden wall. Shortly after the flames were started, however, a strong north wind came up and blew them toward the Romans and threatened to destroy their machines of war. However, another sudden change of wind to the south turned the flames again on the walls and totally destroyed them. Seeing this Eleazar decided that fate was against him but resolved to escape falling into the hands of the Romans by committing one of the most awful tragedies in history. Before doing this, however, he had everything that was valuable destroyed with the exception of the provisions, lest it fall into the hands of the Romans. These food supplies he left, for he did not wish the Romans to think that they had given up the fight for lack of food.

In order to avoid surrendering to the Romans he decided to have all persons in the fortress, both men and women, put to death. This would have been fully carried out had it not been that two old women,



FORTRESS AT ZAWEIRAH

one of them a relation of Eleazar, with 5 children, hid themselves, and so escaped to tell the story. Through these women Josephus obtained the facts and also the substance of Eleazar's speech, urging the garrison on to the awful tragedy. It took two speeches, in fact, to fully convince all the men of the advisability of taking the fatal step. The following extracts give an idea as to the tenor of the speeches:

"Let our wives die before they are abused, and our children before they have tasted slavery; and after we have slain them let us bestow that glorious benefit upon one another mutually, and preserve ourselves in freedom as an excellent funeral monument for us. * * * Our hands are still at liberty and have a sword in them: let them, then, be subservient to us in our glorious design; let us die before we become slaves under our enemies, and let us go out of the world together with

our children and our wives in a state of freedom. This is what our laws command us to do, this it is that our wives and children crave at our hands; nay, God himself hath brought this necessity upon us. * * * Let us, therefore, make haste, and, instead of affording them so much pleasure as they hope for in getting us under their power, let us leave them an example which shall at once cause them astonishment at our death, and their admiration for our hardiness therein."

The effect of this speech was that the men killed their wives and children and then chose 10 men to slay all the other men and from these 10 by lot one man was chosen to kill the other 9 and then set fire to the palace and kill himself. Nine hundred and sixty were killed in this



A GATE IN THE WALLS OF MASADA

way, only the 2 women and 5 children escaping. The next morning when the Romans entered the city a death-like silence prevailed.

The ruins of these walls, store-houses, reservoirs and palace indicate the former strength of this fortress but tell no tale of the awful tragedy which took place here. The spot is seldom visited by tourists because of its distance from the large towns and good camping places. But its historic interest as the last stronghold of the Jews makes it of immense historical interest, and a few days' travel in the "wilderness" will put one in the proper frame of mind to realize the beauty and importance of the gushing springs, such as those of Engedi, where he will doubtless camp on an island of verdure in a desert waste.

FREDERICK BENNETT WRIGHT.

PALESTINE EXPLORATION FUND

THE recently published biography of Rev. Henry Clay Trumbull revives the enthusiasm felt in 1881 over his discovery of Kadesh Barnea. It is true that so long ago as 1845 Rev. John Rowlands had found and described Ayn Qadees, but afterward others had fixed upon two other sites, and the whole subject was in dispute. Not only this, but the difficulty of reaching the place was almost insuperable, since it lay where the Arab escort, over that part of the wilderness, was afraid to go, and all their arts would be used to deceive the traveler who desired to investigate. But Dr. Trumbull, although he went abroad in ill health, was not to be deceived or defeated. His dragoman he won over by promising to put him "into a book." His guides he would go without, if they dared not lead on. And he visited in time all three places in dispute and fully vindicated the claim of Ayn Qadees. On his way home in London he was warmly greeted by the officers of our Fund, and since then Kadesh Barnea has been placed on its maps at the right point. The discovery was a remarkable verification of the Bible narratives of Numbers XIII-XX.

Rev. F. W. Holland had sought for Kadesh Barnea in 1878, but his Arabs "would not go." Others had like experience, even Prof. E. H. Palmer, but Trumbull's account in the *Quarterly* of July, 1881, and in his own volume, set the question at rest. Colonel Conder's questionings of the identification led Dr. Trumbull to reply in the *Quarterly* for April, 1885, with great force and skill. He thus did a master stroke for Biblical research. He even obtained for his *Sunday School Times* a letter from the original discoverer Rowlands, then at an advanced age.

An expedition now to the site, such as Mr. Macalister might lead, would be very useful, giving us photographs and possibly inscriptions. It is understood that the tabernacle remained there while the scattered bands of Israelites "wandered" or lived a nomad life in the wilderness; and from there they started at last for Mount Hor and Canaan, approaching this time from the east. Kadesh of course means "holy," probably referring to the tabernacle. The name Barnea is not so plain, but some derive it from the verb "to wander."

The serious and increasing illness of the Sultan is emphasized to us by the delay in receiving the new firman, but the London office "daily" expects word, and work will be taken up at once.

It should be understood, as the *Quarterly* for October shows clearly, that work never ceases in the general field, for not only do others than Mr. Macalister keep up intelligent investigation, but he is never idle and is as skilful in studying inscriptions on tombs and in identifying sites as he is in excavating a buried city. •

The delay in obtaining the firman for renewed excavation still continues, and is causing great depression to us all, and some are blaming the officers of the Fund. Nothing could be more unjust. Our officers have made and are making every effort, but conditions have been unusually adverse—that is to say, the Sultan has been ill, the British consul at Jerusalem has died, and a new governor has been appointed for Jerusalem. Any one of these causes would have been serious; combined, they have greatly troubled us; and we are not alone in this unhappy suspense. But good news is looked for daily, as Mr. Macalister is in Constantinople.

It is interesting to see how information of the work at Gezer makes its way abroad. A gentleman residing in Palestine wrote an account of it for the *Biblical World*, published by the University of Chicago, and the news of the work at Gezer was telegraphed over the country. Thus a single article did more to widely extend a knowledge of the work than our *Quarterlies* for 3 years of the excellent work of Mr. Macalister on *Bible Side Lights from Gezer* had done.

And now comes a writer calling himself "Cosmopolitan" in the *Boston Transcript*, who writes for our benefit some paragraphs well worth quoting:

The site of the ancient and buried city of Gezer was identified thirty-six years back, but its excavation is the most recent enterprise, begun in 1902 and brought down to last summer, when some glimpses of the results achieved were given at the annual meeting of the Palestine Exploration Fund. R. A. Stewart Macalister, the well-known antiquary, has published a book on the subject.

The excavations have added 1,500 years to the early history of Gezer, dating it back to 3,000 B. C., when a diminutive cave-dwelling race lived there. A landmark in its Biblical history is that the city was given by the King of Egypt to his daughter when she married Solomon. It stood on the verge of the territory inhabited by that mysterious race, the Philistines, and when David routed them he went in pursuit as far as Gezer.

Then there is Rebecca, famous in every Sunday-school. Rebecca, who went to draw water from a well, was picked out from other maidens by the servant of Abraham, who was in quest of a wife for his master's son. She thus became the wife of the patriarch Isaac and the mother of Esau and Jacob. The unearthing of the houses at Gezer helps experts to fill in the story of the wooing of Rebecca by reconstructing for us the home of the maiden and her interesting brother, Laban.

The death of Samson, narrated in the Book of Judges, has been ranked as a myth by critics who could not accept the possibility of his supposed achievement in pulling down the pillars and killing so many Philistines. But in a stratum at Gezer, some three hundred years older than the time of Samson, the excavators have found a form of building which answers to a remarkable extent to the conditions of the story. It is a temple, with a portico supported by four wooden pillars.

The discoveries at Gezer also enable experts to form a fair conception of the Horites, a hitherto unknown race of cave dwellers referred to in Genesis and Deuteronomy. The Amorites, who are mentioned for their "iniquities" in Genesis, now stand in clearer light, for their many forms of idolatry and moral abominations are better understood by the digging out of the "High Place" of Gezer, which is the largest early Palestinian sanctuary or place of worship yet unearthed.

Readers of the October *Quarterly* will have enjoyed Mr. Crawley-Boevey's paper on the Holy Sepulcher, about which he holds more positive views than the late Sir Charles Wilson, and in favor of the site known as the "Skull Hill."

THEODORE F. WRIGHT.



BOOK REVIEWS

A TOUR OF FOUR GREAT RIVERS¹

THE best insight into the actual conditions which existed during the early history of our country is gained from the personal journals written at that time. For this reason the publication of reliable diaries is always to be commended. The journal of Richard Smith is presented to us by Francis W. Halsey in his volume entitled *A Tour of Four Great Rivers*, to which the author has added a short comprehensive history of the Pioneer settlements along the Hudson, Mohawk, Susquehanna and Delaware Rivers.

On May 5, 1769 Richard Smith started from New York traveling by boat to Albany and Cohoes, then overland to Canajoharie and Otsego Lake, from whence he traveled by canoe and Indian trail down the Susquehanna River to Oghwaga. Crossing to the Delaware from here he descended it to Trenton and Burlington, and then crossed overland to New York, thus completing a most interesting circuit. The journal together with the numerous reproductions of contemporary engravings and views of landmarks, which are still standing, gives an excellent idea of this country as it was in the latter part of the XVIII century.

The closing chapter of notes on the manners and customs of the Indians by Richard Smith, is interesting, but his observations were too limited to be of much anthropological value.

The make-up and binding of the book is exceedingly attractive.

HISTORIC HADLEY²

It is now nearly two and one-half centuries since a small band of Puritans withdrew from the settlements in the vicinity of Hartford in Connecticut and purchased from the Indian chiefs the land upon which to establish a new home just north of Mount Holyoke in Massachusetts

¹*A Tour of Four Great Rivers*, the Hudson, Mohawk, Susquehanna and Delaware in 1769, being the journal of Richard Smith, of Burlington, New Jersey, edited with a Short History of the Pioneer Settlements, by Francis W. Halsey. Charles Scribner's Sons, New York, 1906.

²*Historic Hadley*, A Story of the making of a famous Massachusetts town, by Alice Morehouse Walker. The Grafton Press, New York.

and there, for conscience' sake, they settled, their families founding the town of Hadley.

The blood of these hardy Puritan pioneers is to-day coursing the veins of descendants in every nook and corner of the land, all of whom should welcome this pen-picture of the homes and lives of their grandparents 7 to 10 generations removed. Here Governor John Winthrop settled in his old age, died and was buried before the town had hardly commenced to hold religious service in the meeting-house which the new colony had but just erected. Here were secreted until their death the regicide judges by whom Charles I of England was dethroned and executed. The manners and customs of that early day are depicted with a fidelity to detail that adds to the charm of quaintness that pervades the atmosphere of its pages.

It is most gratifying to note the number of valuable books of this character that is published by the Grafton Press who can claim a distinctive field in book-making in producing those that occupy a high place as record sources of history.

HEROES OF DISCOVERY IN AMERICA³

Mr. Morris in his preface thus states his purpose: "Heroes of discovery are these [explorers of America] in the highest sense, and it is fitting that the story of their deeds should be put upon record. This we have sought to do, * * * endeavoring to omit none of the great discoveries, none of the leaders in this great drama of the opening of a new world." The book is of especial interest to teachers of American history in secondary schools, giving, as it does, concise accounts of more than 40 explorers. The range is wide, including the earliest known navigators who reached our coast and the latest seekers for the north pole, as well as such inland pioneers as Daniel Boone. The value of the book is somewhat impaired by the lack of an index.

BOOKS BY DR. PAUL CARUS

That many of the celebrated maxims and moral stories of the Chinese are not only worthy of consideration but exceedingly interesting will be admitted by any one who reads those tales, which have been translated from the original Chinese by Teitaro Suzuki and edited by Dr. Carus. These appear in two small volumes, one *Yin Chih Wen*⁴ and the other *T'ai-Shang Kan Ying P'ien*.⁵

³*Heroes of Discovery in America*. By Charles Morris. With 12 illustrations. Philadelphia and London. J. B. Lippincott, 1906. Pp. 344.

⁴*Yin Chih Wen*, the Tract of the Quiet Way, with extracts from the Chinese Commentary, translated from the Chinese by Teitaro Suzuki and Dr. Paul Carus, and edited by Dr. Paul Carus. The Open Court Publishing Company, Chicago, 1906.

⁵*T'ai-Shang Kan-Ying P'ien*, Treatise of the Exalted One on Response and Retribution, translated from the Chinese by Teitaro Suzuki and Dr. Paul Carus, containing Introduction, Chinese Text, Verbatim Translation, Explanatory Notes and Moral Tales. Edited by Dr. Paul Carus, with 16 plates by Chinese Artists and a frontispiece by Keichyu Yamada. The Open Court Publishing Co., Chicago, 1906.

The first, which is "The Tract of the Quiet Way with Extracts from the Chinese Commentary" contains maxims much resembling those from the Book of Proverbs, while the notes of the Chinese Commentator throw interesting side-lights on the Chinese interpretation of these maxims, which are read and studied by the Chinese at home and in their schools. Although these are almost unknown in this country, yet, as Dr. Carus says, "there is probably no family in China without them."

The second book is a "Treatise of the Exalted One on Response and Retribution." It contains the original Chinese text together with a verbatim translation of the same. The free translation will be of great interest to all classes of readers. The moral tales include such subjects as "The Power of a Good Man's Name," "The Ruffian's Reform," "Punishment Apportioned to Crime," etc. The illustrations are by Chinese artists and add greatly to the value and interest of the book.

Another book by Dr. Carus is entitled *Amitabha*.⁶ It is a story of the Buddhist Theology, into which considerable romance is woven. It describes the attempts of a young man Charaka by name to solve the problem of the Supreme Being. Although an ambitious and active young man he becomes a recluse, but finding that his spirit is not satisfied by such a life, he leaves the monks with whom he at first cast his lot, engages in active life, and rises to power in the empire. His final success he considers as due to his "application of the Lord Buddha's maxim of loving-kindness in all fields of human intercourse, in family life, in politics, in labor and social affairs, in dealing with friends and foes, with animals, and even with the degenerate and criminal." The enlightenment of our souls is most important, he declares.



EDITORIAL NOTES

PREHISTORIC SKELETONS FROM OMAHA.—On Nov. 3 a remarkable skull was found near Omaha, Nebr., in what is spoken of in newspaper reports as "an Indian mound." However, Mr. Warren Upham writes that "as the locality is in the great loess area, Prof. Winchell and I surmise that the 'mound' may be a natural one, and formed of the loess, as originally deposited and undisturbed excepting probably some surface erosion. Then the age would be nearly the same as at Lansing, Kans., which I would estimate to be probably about 15,000 to 12,000 years." The skull is described as very prognathous, and as belonging to a giant. Three other skulls and skeletons were found in the same locality. Concerning these, Mr. Upham writes further, "if they are from an aboriginal burying mound I should say

⁶*Amitabha, a Story of Buddhist Theology*, by Paul Carus. The Open Court Publishing Company, Chicago, 1906.

that they represent some abnormal family of no important significance." A full discussion of these discoveries will appear in the near future in RECORDS OF THE PAST.

WIDTH OF THE OLD VIA SALARIA, ROME.—While making a new bridge on the Via Salaria, on the Rome side of Castel Giubileo, a number of blocks of the ancient road were discovered *in situ* from which it has been possible to ascertain that the road was nearly 16 ft. wide.

THE ROUTE OF THE EXODUS.—Mr. Currelly in a lecture delivered at the exhibition of the Egypt Exploration Fund at King's College, England, claimed that the route of the Exodus must have passed near Tanis, whose garrison he thinks turned out in pursuit and were later magnified into "Pharaoh and his hosts." He also considers that the manna was nothing but snow which the exiles saw for the first time after they crossed the Red Sea into the mountains of Sinai.

EARLY CONNECTION BETWEEN GREECE AND EGYPT.—Mr. H. R. Hall of the Egypt Exploration Fund asserts that he can prove a connection between Greece and Egypt as early as the XII dynasty, and can probably extend it back to neolithic times. He contends that the earliest civilization of both countries was neither Semitic nor Aryan but was derived from Prof. Sergis' Mediterranean race of whom he considers the "dark dolichocephalic" Southern European of the present day the representative.

EGYPTIAN TOTEMS.—M. Victor Loret has put forward the theory that the gods of the Egyptians were the totems of the different Egyptian clans before they were worshiped as gods. If this theory is correct we have a striking parallel in the totems of our Alaskan Indians.

THE STONE AGE AT BRABRAND, DENMARK.—In a paper by Mr. Thomsen, which recently appeared in the *Memoires* of the Royal Society of Northern Antiquaries of Copenhagen, he describes a number of interesting objects of the Stone Age found at the eastern end of the "long and straight lake of Brabrand, which passes through the river of Aarhus to the Cattegat in a spot which in early times must have formed with that river an islet."

Among the objects specially noted are: a hatchet of deer horn attached to a thick wooden handle, from which the bark had not been removed (the hatchet having been broken away from the handle at the original hole made for the attachment at its narrower part, another hole was drilled through the broader part); a hatchet ornamented with lozenge-shaped figures bounded by parallel lines, and with parallel bands of dots and of triangular figures formed by the broken point of a flint flake; a bone comb of 5 teeth, of which 3 remain; the left shoulder blade of an aurochs, from which 3 roundels have been partially cut out, and 6 similar bones, belonging to various animals, with a fragment of a ring detached from one of them; no pottery but a vase, almost complete, with an ornament on the edge formed by the finger-nails of the operator, and frag-

ments of similar ones; a piece of carved wood, apparently for throwing; a long piece of wood, worked to a point at the lower end; and many piles.

STUDY OF CALIFORNIA SKULLS.—Mr. Ales Hrdlicka has recently been engaged in studying prehistoric skulls found in different parts of California. The crania in the collection studied were similar enough to lead him to conclude that they belonged to members of the same tribe, the common progenitors of the various Indian tribes at present in California. From the small size and the shape it seems probable that they were of small stature and low mental development. Certain Indian tribes of Mexico are physically related to the Californians.

ANCIENT NINEVEH.—Sir E. Maunde Thompson, Director of the British Museum, in his report just issued, says, concerning the work of the past year at Nineveh:

The excavations which have been in progress since 1903 on the site of ancient Nineveh were brought to a close in February, 1905. The mound of Kouyunjik has now been fully explored, testing trenches having been cut in all directions, in order to be sure that no remains have been overlooked. The principal recent discovery is the site of the Temple of Nabu, the war-god. The ruins were cleared, but the building had been so utterly destroyed and burned, presumably by the Elamites at the capture of the city, that it was not possible even to make a complete plan of it. The library of tablets, which it probably contained, must have been entirely destroyed. So thorough, indeed, was the destruction of the city by the conquerors, to judge from the condition of the remains, that the preservation of the collection of tablets now in the museum, and forming only a part of the great library of Sennacherib and Ashur-bani-pal, must be attributed to some accidental falling in of debris, which thus covered them and saved them from the enemy.—*Antiquary*, London.

EXCAVATIONS AT EPHEBUS.—The excavations on the site of the Temple of Artemis were brought to a close on June 17. The result of the two seasons' excavations is as follows:

The remains of 4 temples superimposed one on another have been examined. Taking these temples in order, from the latest to the earliest, they are: (1) The temple of the middle of the IV century B. C., which was the main object of Mr. Wood's exploration. Mr. Wood removed almost every relic of it, and his work proves to have been very thorough. The remains which he discovered are those now in the British Museum. (2) The temple built in the middle of the VI century B. C., usually associated with the name of Croesus, was the original object of the recent exploration. This temple was only touched by Mr. Wood. The whole area of the surviving platform has now been cleared, and, from the numerous fragments recovered, an architectural restoration of all except the architraves will be possible. (3) The third temple, the existence of which has been hitherto unsuspected, was very little below the level of the one above, and was of smaller area. Only small traces of it remain, and its period of existence was probably short. (4) Of the lowest and earliest temple, the structure of what may have been the naos or statue-base alone remains. The lowest blocks of this structure are laid on the virgin sand. It was here that numerous objects of gold, ivory, etc., were found. From the style of these objects it is inferred that the period of this earliest temple was probably not earlier than the VII century B. C. The work was much impeded by abnormally heavy rains.—*Antiquary*, London.

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